# TEXTILE TECHNOLOGY DIGEST

VOLUME 18 AUGUST 1961 NUMBER 8

# ABSTRACTS

## FIBERS A

FIBERS: CLASSIFICATION--REVIEW OF TYPES AND PRODUCTS. P.-A. Koch. Z. ges. Textil-Ind. 63, No. 2: 104. (1961). In German. Through BCIRA 41: 1557 (1961).
This is the third supplemented edition of a fiber table listing natural and chemical fibers (position at the end of 1960). (3378)

MOISTURE REGAIN OF TEXTILE FIBERS. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. May 1961. 2 p. Bull. X-138 (replaces Bull. X-44). Free.
Moisture regain of various fibers at different humidities is presented. (3379)

## Natural fibers A1

VARIATION IN THE PROPERTIES OF COTTON FIBERS WITH LENGTH. K. P. R. Pillay and K. S. Shankaranarayana (So. India Textile Research Assoc.). Textile Research J. 31: 515-524 (June 1961).
Variation in the properties of fibers has been studied, in the present paper, on 12 cottons, the fibers having first been sorted into groups based on quartile lengths. It is found that, in general, fiber strength, uniformity of strength, maturity, and reversals per unit length increase with increase in length group, while elongation per unit load decreases. The variation in fineness shows that the extreme length groups are finer than the middle ones. The significance of these findings for elucidating many problems of practical interest is indicated briefly. 18 refs. (3380)

EFFECT OF COTTON DEFOLIATION ON YIELD AND QUALITY. W. H. Tharp and others. U.S. Agri. Research Serv., Washington 25, D.C. Jan. 1961. 24 p. Production research report no. 46. In cooperation with the Arkansas, Mississippi, Missouri, and Oklahoma Agri. Experiment Stations.
The research reported evaluates the potential loss in yield and quality of cotton that might be expected when defoliant chemicals are applied during the different stages of boll development and crop maturity. 20 refs. (3381)

COTTON IN THE LAUNDRY AND DRYCLEANING INDUSTRY. C. W. Russell. Nat. Cotton Council, Utilization Research Div., Memphis, Tenn. Apr. 1961. 19 p.
The purpose of this report is to update statistical data on the types of textiles used in the laundry and drycleaning industry and to provide information on the competitive position of cotton as well as on the research and promotion opportunities for expanding cotton consumption. (3382)

USE OF COTTON FIBER TESTS IN MARKETING COTTON. C. M. Wells and J. F. Hudson. So. Reg. Cotton Mktg. Research Comm. Mar. 1960. 23 p. Available from Louisiana Agri. Experiment Station, Baton Rouge, La. Southern cooperative series bull. 72.
Contents: Use of fiber tests by the cotton industry: use by shippers in purchasing cotton, use by shippers in selling cotton, fiber specifications in shipper contracts, use by spinners in purchasing cotton, use by spinners in processing; Relationship of fiber tests to price; Cost of fiber testing; Fiber testing in relation to the cotton marketing system; Recording micronaire value on form 1 card. (3383)

WHO KILLED COTTON QUALITY? W. T. Waters and J. Phillips (Auburn Univ.). Textile Inds. 125: 56-62 (July 1961).
A series of trials have been run at two gins to determine the effect of lint cleaning and drying on cotton quality. In general, the effects due to one lint cleaner and a drying temperature of 190° F were not appreciable, while the effects of three cleaners and a drying temperature of 290° F were very significant. The effects of lint cleaning and excessive drying temperature were found to be more noticeable in spinnable limit and yarn strength than in other properties. 23 refs. (3384)

RELATION OF FIBER PROPERTIES AND PROCESSING PERFORMANCE OF COTTON. W. A. Faught. U.S. Agri. Mktg. Serv., Washington 25, D.C. 1958. 6 p. Paper presented at meeting of the Cotton Fibers Subcommittee of the ASTM, New York, Oct. 16, 1958.
The effects of various ginning practices on fiber properties and subsequent mill processing in terms of waste, ends-down, loom stops, and yarn strength and appearance are summarized. (3385)

EFFECTS OF GIN DRYING AND CLEANING ON FIBER QUALITY AND MILL PROCESSING PERFORMANCE AND COSTS. J. E. Ross, U.S. Agri. Mktg. Serv., Stoneville, Miss. 1959. 10 p. Paper presented at Western Cotton Production Conference, Phoenix, Arizona, Mar. 4, 1959.
The effects of various ginning practices on fiber properties, mill processing performance, and costs, as well as on the final ratings of the cloth in the gray and dyed state, are summarized. (3386)

GINNING OF COTTON. K. Blaschke. Melliand Textilber. 42, No. 2: 139-146; No. 3: 258-261 (1961). In German. Through BCIRA 41: 1789 (1961).
Older-type and modern ginning machines equipped with drying, cleaning, extracting, and feeding devices for hand- and machine-picked cotton as well as cotton harvested by means of strippers, are reviewed, with special reference to the mechanism of roller gins and standard-density bale presses. Utilization of the cottonseed is pointed out briefly. (3387)

EFFECTS OF TANDEM LINT CLEANING ON BALE VALUES, WEIGHT CHANGES, AND PRICES RECEIVED BY FARMERS. Z. M. Looney and J. L. Ghetti. U. S. Agri. Mktg. Serv., Washington, 1960. 20 p. Marketing research report no. 397. (3388)

EFFECTS OF SEED COTTON TRAMPING ON LINT GRADES AND VALUES. W. E. Taylor. Oklahoma Agri. Experiment Station, Stillwater, Okla. Nov. 1960. 14 p. Oklahoma Agri. Experiment Station Bull. no. B-570.
From 3 years of study using 3 varieties of cotton and 2 methods of harvest, there is little indication that the Oklahoma cotton producer would suffer a loss of grade or returns as a result of tramping hand-snapped or machine-stripped cotton in the wagon as it is harvested, in order to reduce the amount of wagon space required. The results of this study cannot necessarily be projected to other areas having different climatic conditions and methods of harvest. 9 refs. (3389)

CHANGEOVER IN COTTON DRYERS FROM SOLID TO LIQUID FUEL. M. Y. Topada, I. I. Chernyshev, and N. N. Komissarov. Khlopkovodstvo 11, No. 2: 48-51 (1961). In Russian. Through BCIRA 41: 1790 (1961).
The advantages of the new heating system are enumerated. (3390)

HYGROSCOPICITY OF ACETYLATED JUTE. S. C. Roy (Indian Jute Mills Assoc.). (Letter to the editor). Textile Research J. 31: 573-575 (June 1961). (3391)

## Manmade fibers A2

TECHNICAL AND PRODUCTION DATA OF PRINCIPAL MANMADE FIBERS AND METALLIC, STRETCH, AND BULK YARNS PRODUCED IN THE UNITED STATES. Am. Textile Reptr. 75: 59-90 (July 13, 1961).
The 1961 revision is presented in three sections: (1) technical and production data on principal manmade fibers; (2) facts on leading metallic yarns for use by weavers and designers; and (3) facts about stretch and bulk yarns. Names and addresses of manufacturers and licensees are included. Reprints are available from America's Textile Reporter, 286 Congress St., Boston 10, Mass. at 50¢ each. (3392)

WORLD MANMADE FIBER SURVEY. Textile Organon 32: 81-104 (June 1961).
This annual survey of the world manmade fiber producing industry includes production statistics and a directory of producers' names. (3393)

MANMADE FIBERS. W. H. Hindle. Chem. Week 88: 69-80 (Apr. 15, 1961).
The changing pattern and future growth potential for manmade fibers are examined. (3394)

ACRYLICS: FIBER TO FABRIC. G. A. Briggs (Courtaulds Ltd). Textile Weekly 61 (1): 1517-1519 (June 30, 1961).
The properties of Courtelle are compared with other acrylic fibers, manmade fibers, and natural fibers. (3395)

TRICEL: ITS DEVELOPMENT, MANUFACTURE, PROPERTIES, AND END-USES. M. W. Alford (Courtaulds Ltd). J. Textile Inst. 52: P242-P255 (June 1961). (3396)

RAYON AND SYNTHETIC FIBERS OF JAPAN, 1961. Japan Chem. Fibres Assoc., No. 3, 3-chome, Nihonbashi-Muromachi, Chuo-ku, Tokyo, Japan. 1961. 64 p.
This annual contains articles on Japanese manmade fibers (with fabric swatches), a table of the chemical properties of these fibers, articles on Japanese textile design, and a directory of manufacturers. (3397)

SPINNERETTES FOR PROFILE FIBERS. VEB Spinndüsen Fabrik. Man-Made Textiles 38: 32 (July 1961).
Spinnerettes for supplying any desired profile, in accordance with the requirements specified by fiber producers, are described. (3398)

EFFECT OF SPINNING CONDITIONS ON THE TEXTILE PROPERTIES OF CHEMICAL FIBERS. A. B. Pakshver. Faserforsch. u. Textiltech. 12, No. 1: 9-18 (1961). In German. Through BCIRA 41: 1565 (1961).
In this review the author discusses the molecular structure of chemical fibers, differences between native and chemical fibers, and effects of aftertreatment conditions on the degree and rate of sorption of dyes and other substances, and on the physical and mechanical properties of chemical fibers. Some practical proposals are made for the production of shrinkage-free and set fibers and voluminous yarn, desulfurization of viscose during spinning, dyeing of hydrophobic fibers before drying, dissolution of difficultly soluble polymers, carrier dyeing of hydrophobic fibers, and increase of dyeing washfastness. 15 refs. (3399)

FIBERS TODAY. PART 10. ACETATE AND TRIACETATE FIBERS. J. W. S. Hearle (Manchester Coll. Sci. & Technol.). Textile Mfr. 87: 219-222 (June 1961).
The production, constitution and form, properties, and uses of the fibers are covered. (3400)

HANDLING AND USING ORLON SAYELLE FOR SATISFACTORY RESULTS. E. M. Hicks and B. F. Faris (E. I. du Pont de Nemours & Co.). Am. Textile Reptr. 75: 23-24 (July 13, 1961).
The characteristics of Orlon Sayelle bicomponent fiber, its response to heat, wetting, drying, and dyes, and the characteristics it imparts to fabrics are summarized. (3401)

BULKED ACRYLICS. A. J. Hall. Fibres and Plastics 22: 191-195 (July 1961).
The advent of high bulk fibers has done much to challenge wool's two main advantages over manmade fibers; its felting properties and the permanent crimp which characterizes its fibers. Here the structure of wool fibers in relation to crimp is discussed, together with methods for producing synthetic fibers as exemplified by Orlon Sayelle with a similar structure. 7 refs. (3402)

ORLON TYPE 75 ACRYLIC FIBER. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. May 1961. 2 p. Bull. OR-115 (replaces Bull. OR-106). Free.
Fiber properties, yarn characteristics and processing, and bleaching procedures are outlined. (3403)

HIGH MODULUS GLASS FIBERS. Fibres and Plastics 22: 168-169 (June 1961).
The development and preparation of high modulus glass fibers and the properties they confer on reinforced plastics are briefly summarized. (3404)

CERAMIC FIBERS: USES OF ALUMINUM SILICATE. C. B. Walworth (Carborundum Co.). Fibres and Plastics 22: 170-173 (June 1961).
The types and forms of fibers available, their properties, and their applications are described. (3405)

CONTINUOUS FILAMENT CERAMIC FIBERS. E. H. Girard (Carborundum Co.). Wright Air Development Div., Wright-Patterson Air Force Base, Ohio. Feb. 1961. 25 p. WADD tech. report 60-244, pt. 2.
Of a number of refractory materials examined to determine their usefulness as materials for crucibles for melting, fining, and drawing high-silica glass compositions, niobium diboride gave the most promising results. Time and temperature relationships as well as variations in batch composition were investigated in an effort to improve premelt characteristics. The addition of vanadium pentoxide was particularly effective. Fiber drawing studies showed no improvement in either the drawing characteristics or in the physical characteristics of fiber when well-fined premelt was used. For Part 1 see abstr. 4733/60. (3406)

FIBER DATA SHEETS. POLYAMIDE FIBERS. PART 1. CLASSIFICATION AND DEFINITION. P.-A. Koch. Fibres and Plastics 22: 196-199 (July 1961).
The origin, development, starting materials, and methods of manufacture of polyamide fibers are summarized. A tabulation giving trade names, starting materials, and manufacturers is included. (3407)

SOME VISCOELASTIC PROPERTIES OF NYLON. F. L. Warburton, J. F. P. James, and S. Hother-Lushington (Wool Inds. Research Assoc.). Brit. J. Appl. Phys. 12: 230-237 (May 1961).
The dynamic modulus of nylon fibers was measured over a wide frequency range at different temperatures and humidities. The results of the experiments can be explained on the assumption that increase in temperature only affects the internal friction of nylon, whereas the absorption of water also has a significant although smaller effect on the elastic properties. 6 refs. (3408)

POLYPROPYLENE FIBERS. A. B. Thompson (Imp. Chem. Inds. Ltd). Man-Made Textiles 38: 35-38 (July 1961).
The technical features of the high tenacity filament yarns intended primarily for fishnet twines and rope by I.C.I. are described. 7 refs. (3409)

DEVELOPMENT ASPECTS OF THE POLYOLEFIN FIBERS. O. Nuss. Chemiefasern 11, No. 1: 34-36 (1961). In German. Through BCIRA 41: 1583 (1961).
The development of polyolefins, spinning and processing techniques, and properties and uses of the fiber are reviewed. 10 refs. (3410)

AVRIL RAYON. Am. Viscose Corp. Am. Textile Reptr. 75: 55, 101 (July 13, 1961).
Processing recommendations for Avril (an improved version of Fiber 40) are covered. (3411)

PRACTICAL ASPECTS OF DYEING, PRINTING, AND FINISHING OF WOVEN AND KNITTED FABRICS FROM CHLORINATED FIBERS. M. Gord. Teintex 26, No. 2: 107-125 (1961). In French. Through BCIRA 41: 1579 (1961).
Chemical and physical properties of Rhovyl, Thermovyl, and Fibravyl fibers are discussed, and dyeing and printing processes are described. (3412)

ENIGMA OF POLYPROPYLENE. Skinner's Silk & Rayon Record 35: 628-629 (July 1961).
The problems which have limited the commercial success of polypropylene fibers are summarized: resistance to dyeing; the selection of an inhibitor to correct the inherent instability of polypropylene which will act as an antioxidant and light stabilizer, prevent breakdown of inherent viscosity, and is non-staining, non-toxic, and non-migratory; slow recovery from loading; chemical inertness. The features which still make it a potentially attractive fiber are also discussed. (3413)

POLYURETHANE TEXTILES. Fibres and Plastics 22: 163-164 (June 1961).
Polyurethanes are available for textile purposes in two forms: as foam and as elastic covered yarn, e.g. Vyrene spandex fibers. Their properties and uses are briefly noted. (3414)

PHRILAN N: SPECIAL VISCOSE FIBER FOR FLOOR COVERINGS. Chemiefasern 11, No. 1: 18-19 (1961). In German. Through BCIRA 41: 1571 (1961).
Phrilan N (Phrix-Werke AG) is a special carpet fiber based on cellulose, with a completely smooth and hard surface particularly resistant to soiling. The thick skin zone imparts to the fiber excellent rigidity; its strength and abrasion resistance (especially in the wet state) are higher than in the usual cellulosic fibers. The increased elongation and the good elasticity and strength in the transverse direction (as compared with the previous skin fiber) ensure good processing properties and a high wear value of the floor covering. Phrilan N can be dyed with all dyes for regenerated cellulose fibers and retains the increased strength properties during dyeing. (3415)

CONCEPTS OF INTERNAL STRESS AND PERMANENT SET IN REGENERATED CELLULOSE. E. M. Hicks, Jr. (E. I. du Pont de Nemours & Co.). Furman Univ. Bull., Furman Studies 7, No. 3: 17-35; 8, No. 1: 13-29 (1960). Summary in Chem. Abstr. 55: 10894e (May 29, 1961). (3416)

## YARN PRODUCTION B

PROCESSING ORLON ACRYLIC STAPLE ON THE COTTON AND AMERICAN SYSTEMS. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. May 1961. 12 p. Bull. OR-114 (replaces OR-78 and OR-98). Free. (3417)

MODERN FIBER BLENDING PRACTICE. S. A. G. Caldwell. Man-Made Textiles 38: 51-53 (June 1961).
The author explains the reasons underlying a blending program and how the best results are obtained when blending different types of fibers, particularly natural, with manmade fibers. (3418)

BLENDING. N. C. Basu. Indian Textile J. 71: 312, 313, 315 (Mar. 1961).
The subject of blending is discussed under the following headings: purpose; causes of irregular blending; and factors affecting fiber arrangement, fabric appearance, and component fiber segregation. 6 refs. (3419)

TRENDS IN COTTON PROCESSING EQUIPMENT. R. Charlebois (Dominion Textile Co. Ltd). Can. Textile J. 78: 51-55 (June 23, 1961).
Progress in machinery design since World War 2 is evaluated, and future trends are forecast. (3420)

FIBER BLENDING FOR WOOLEN YARN. PART 2. L. Bellwood. Wool Rev. 34: 31-32 (May 1961).
The discussion of considerations in the choice of fibers is continued. See abstr. 2351/61 for Part 1. (3421)

DACRON/COTTON BLENDS. J. A. Newnam (E. I. du Pont de Nemours & Co.). Am. Textile Reptr. 75: 33, 103 (July 13, 1961).
The yarn characteristics of blends of Dacron with Egyptian and domestic cotton are tabulated, and pointers for their processing are itemized. (3422)

WOOLEN PROCESSING OILS. Fibres and Plastics 22: 208-209 (July 1961).
The properties and applications of the 6 groups of wool lubricants in common use are described: fatty oils of vegetable origin; fatty acid oils of animal origin; mineral oils of petroleum origin; recovered oils obtained from "cracked" spent scouring liquors; blends of the former types; and surface active agents. (3423)

IMPROVEMENT OF CLEANING IN SPINNING MILLS. PART 12. CHARACTERISTICS AND EFFICIENCY OF THE BLO-CLEANER. Y. Niitsu, S. Fujimori, and K. Hosokawa. J. Textile Machy. Soc. Japan 14, No. 3: 193-198 (1961). In Japanese (English summary). Through BCIRA 41: 1601 (1961).
Air velocity distributions and air flow rates from the outlets of the Blo-Cleaner were determined. It is claimed that the Blo-Cleaner reduces the loss of the final product from 15% to 10% and saves the work of two men in a 50,000-spindle mill spinning 30s to 40s yarn. (3424)

CHOOSING THE BEST DRAFT. PART 3. CARDED LONG STAPLE COTTON. J. Simpson, A. T. Callegan, and C. L. Sens (So. Reg. Research Lab.). Textile Inds. 125: 91-96 (June 1961).
Results of a study made to determine the optimum allocation of drafts between processes from picking through spinning to obtain yarns of optimum quality are presented using the same procedures as in Part 1 (abstr. 2266/60). 5 refs. (3425)

CONSIDERATIONS IN DIRECT SPINNING FROM DRAW-FRAME SLIVER. A. Barella and Y. Prat. Investigacion e Informacion Textil 3, No. 4: 323-333 (1960). In Spanish. Through BCIRA 41: 1834 (1961).
A statistical analysis is made of the variations between bobbins, rovings, and within individual bobbins. The necessity of controlling the machine performance to eliminate any uncontrolled drafts and of checking the count regularity values, as well as of paying attention to the spinning conditions to avoid ends down, increase the velocity, and improve the irregularity and appearance of the yarn, is pointed out. (3426)

TWEEDALES AND SMALLEY SYSTEM OF DIRECT SLIVER SPINNING. Tweedales & Smalley Ltd. Globe Rev. 3, No. 4: 180-230 (1961).
This entire issue is devoted to a full description of the direct sliver spinning system and covers theory, mill practice, machinery used, and economics. (3427)

QUALITY STANDARDS IN COTTON SPINNING. L. Viertel. Investigacion e Informacion Textil 3, No. 4: 303-322 (1960). In Spanish. Through BCIRA 41: 1833 (1961).
The graphs given, showing the relationships between various fiber, intermediate-product, and yarn parameters and quality, are based on literature data, the respective publications being enumerated. (3428)

TOW-TO-TOP CONVERTING SYSTEMS. H. Needham and W. Parkin. Wool Rev. 34: 29-31 (May 1961).
Although cutter and breaker types of convertors are available for processing all types of tows for orthodox and high-bulk yarns, the general policy of both combers and spinners appears to be the use of the cutter types for producing orthodox staple from all fibers, the Turbo-stapler for the production of high-bulk acrylics, and the Halle-Seydel for Schappe spun 100% nylon yarns. The three main cutter types (Greenfield, Pacific, and Rieter D6/2) and two main breaker types (Halle-Seydel and Turbo-stapler) are briefly described. 9 refs. (3429)

PROSPECTS FOR AUTOMATION IN WOOLEN YARN MANUFACTURE. R. T. D. Richards (Wool Inds. Research Assoc.). Textile Merc. 144: 791-794, 796 (June 9, 1961). (3430)

WORSTED YARN PROCESSING: MAJOR CHANGES IN TECHNIQUES. Wool Record 99: 1551, 1553 (May 26, 1961). (3431)

## Opening, picking, fiber preparation B1

ANALYSIS OF DROPPINGS IN OPENING MACHINES. K. Higuchi and M. Machida. J. Textile Machy. Soc. Japan 14, No. 3: 172-180 (1961). In Japanese (English summary). Through BCIRA 41: 1591 (1961).
Droppings were collected at each blowroom process, and the dust was separated and classified by size and by aerodynamical terminal velocity; the Crighton opener drops more dust than any other blowroom machine. (3432)

WARNING DEVICE FOR FEED HOPPERS. Electrical Productions Ltd. Textile Recorder 78: 74 (June 1961).
The Fox hopper warning device is designed to give a warning in the event of an incorrect weigh or filling of the hopper. (3433)

## Carding and combing B2

PHOTOCELL CONTROL FOR CARDING MACHINE FEEDS. B. S. Salozhin. Tekstil. Prom. 20, No. 4: 72-73 (1960). In Russian. Summary in European Tech. Digests 6: 91-92 (Jan. 1961).
See abstr. 2367/61. (3434)

NEP REDUCTION ON THE REVOLVING FLAT CARD. H. Perner and G. Jung. Deut. Textiltech. 11, No. 2: 61-63 (1961). In German. Through BCIRA 41: 1592 (1961).
Three different card constructions were examined with a view to determining the extent of nep reduction. It was found that these cards remove between 63 and 72% of the neps present in the lap. (3435)

MODIFIED LAP PREPARATION IN COTTON COMBING. R. Tobel. Z. ges. Textil-Ind. 62, No. 23: 1026-1030 (1960). In German. Through BCIRA 41: 1593 (1961).
The machine arrangement and method described show how an installation with classical machinery can be altered without increased floor-space requirements, large investments, and appreciable impairment of the yarn quality. Higher productivity and considerable reduction in comber waste are thereby attained. (3436)

RIETER ROLLER CARD, MODEL C3. W. T. Swatek. Melliand Textilber. 42, No. 3: 262-265 (1961). In German. Through BCIRA 41: 1823 (1961).
The new machine was especially developed for carding long-stapled manmade fibers. The frame, cylinder and working parts, fancy, cover, pneumatic stripping device, doffer, driving elements, and grinding motion are described and illustrated. (3437)

## Drawing and roving B3

STUDIES ON THE FRICTOR. PART 4. TESTS OF SLIVER BULKINESS. K. Mihira, H. Takeda, and T. Takeda. J. Textile Machy. Soc. Japan 14, No. 3: 181-187 (1961). In Japanese (English summary). Through BCIRA 41: 1595 (1961).
When a sliver is inserted in the frictor (see abstr. 2683/59), with its ends tied to the frictor's ends, and turned round inside the frictor, the dynamic drafting force of the sliver against the frictor decreases with each turn and a decreasing curve (bulkiness curve) is obtained. The effects of fiber orientation, length, and fineness were examined, and the properties of natural and synthetic fibers and blends are compared. (3438)

SLIVER DIRECTION, HOOKED ENDS HAVE SIGNIFICANT EFFECT ON THE PARALLELIZATION OF COTTON FIBERS. J. Simpson (So. Reg. Research Lab.). Textile Bull. 87: 39-42 (July 1961).
Experiments using the Lindsley mechanical method for measuring fiber parallelization indicated that a high draft tended to straighten out more of the trailing than leading ends. This indicates that under the present system of processing a low draft at first drawing followed by a high draft at second drawing, would be more effective for reducing hooked ends. Hooked ends had a decided effect upon the force required to draft the slivers. When the majority of hooked ends were leading in the direction of drafting, the required drafting force was less than when they were trailing. 9 refs. (3439)

IMPROVING QUALITY AT THE SPEEDFRAME. L. J. Gibson. Textile Weekly 61 (1): 1344, 1347-1348 (June 9, 1961); 1411-1412, 1414 (June 16, 1961); 1463-1464 (June 23, 1961).
The slow-moving rollers of the speedframe drafting systems are particularly prone to torsional oscillations, and these variations in roller speed cause variations in the fiber end arrangement within the roving. The causes and effects of this irregular movement and methods for control on 3-line drafting systems are discussed. (3440)

INVESTIGATION ON INTERFIBER FRICTION IN FIBER SYSTEMS. PART 7. KINETIC THEORY OF DRAFTING SLIVERS. S. Kinoshita and T. Takizawa. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 217-220 (1961). In Japanese (English summary). Through BCIRA 41: 1594 (1961).
The effect of fullness on the withdrawal force of a single fiber from a bundle, the effect of withdrawal speed, and the relative velocity of stick-slip motion were observed for various fiber bundles and are discussed theoretically. (3441)

TRIALS OF 3 DENIER 3-5 INCH NYLON STAPLE ON BRADFORD-TYPE OPEN DRAWING MACHINERY. Brit. Nylon Spinners Ltd. Advance Report No. 37. Apr. 1961. 8 p.
Results from trials made to determine optimum values of draft and ratch on a typical Bradford-type open drawing set of machinery are reported. (3442)

WEIGHT CARRIERS WITH RELIEVING LEVER AND STABLE CAGE. Melliand Textilber. 42, No. 3: 273-274 (1961). In German. Through BCIRA 41: 1827 (1961).
The universal UT weight carrier (Wilhelm Stahlecker GmbH and Württembergische Spindelfabrik GmbH) can be used for weighting the top rollers of ring spinning and preparatory drawing systems with two and three rollers. Owing to the reconstruction of the relieving lever, the top rollers of high-draft drawing systems can be easily weighted and released by a single manipulation, i.e. lifting the relieving lever and swinging the weight carrier through 90° and vice versa. (3443)

STICK-SLIP FRICTION AS A CAUSE OF TORSIONAL VIBRATION IN TEXTILE DRAFTING ROLLERS. H. Catling. Proc. Instn Mech. Engrs 174, No. 17: 575-586 (1960). Through BCIRA 41: 1596 (1961).
Rollers were observed under laboratory conditions: below a limiting cut-off speed, vibrations dependent on stick-slip frictional behavior are spontaneously generated and maintained. The liability of particular material-lubricant combinations to stick-slip behavior was examined, and an instrument for determination of stick-slip liability of single bearings has been developed. (3444)

## Spinning, winding, twisting B4

PRACTICAL HINTS ON PRODUCTION OF GOOD RING BOBBINS FOR WINDING. A. Routh. Textile Dig. 21: 140-141 (Oct.-Dec. 1960).
The characteristics of a satisfactory bobbin and pointers on achieving them are outlined. (3445)

SPINDLE DRIVES ON SPINNING AND TWISTING MACHINES. O. Heimeran. Textil-Praxis 16, No. 3: 238-242 (1961). In German. Through BCIRA 41: 1838 (1961).
The developments of spindle drives and the efforts of spinning machine designers to overcome the disadvantages of the 4-spindle drive are reviewed, with reference to the relevant German patent literature. (3446)

STROBOSCOPIC MEASUREMENT OF SPINDLE ROTATION. A. Brearley and E. Oxtoby. Textile Recorder 78: 52-53, 62 (June 1961).
The image effects obtained from the stroboscope are discussed, and a method of calculating rotational speed from multiple-image observations is suggested. (3447)

DETERMINATION OF THE OPTIMUM BREAKING RATE OF YARNS DURING SPINNING. S. Firrao. Riv. Industr. Cotoniera 15, No. 1: 41-45; No. 2: 105-110 (1961). In Italian. Through BCIRA 41: 1841 (1961).
Factors to be considered in the determination of the optimum breaking rate are discussed, with reference to the productivity of the spinning machine in dependence of the breakage frequency of the thread. (3448)

DIRECT-SPUN FILLING ELIMINATES REWINDING. So. Machy. Co. Am. Textile Reptr. 75: 35 (June 29, 1961).
The Bild-O-Matic is a self-contained and fully automatic builder motion for warp and filling spinning frames. For filling bobbins, the Bild-O-Matic builds the feeler bunch (yardage preset, therefore consistent) doff after doff; builds the body of the bobbin with straight sides regardless of bobbin taper; builds the tip bunch; bears the ring rail down and can be set to give 1-1/2 to 10 locking wraps as rail is lowered. (3449)

USE OF THE A. S. D. (AMBLER SUPERDRAFT) RING FRAME FOR SPINNING 3 DENIER 3-5 INCH NYLON STAPLE. Brit. Nylon Spinners Ltd. Advance Report No. 39. May 1961. 4 p.
Trials on a laboratory scale to determine the best conditions for spinning 32 worsted count all-nylon yarn from 3 denier 3-5 inch high crimp, heat-set, semi-dull staple on an Ambler Superdraft ring frame are reported. (3450)

USE OF AN A. S. D. (AMBLER SUPERDRAFT) SPINNING FRAME FOR SPINNING 6 DENIER 4-6 INCH NYLON STAPLE. Brit. Nylon Spinners Ltd. Advance Report No. 40. May 1961. 2 p.
Experiments to find the optimum flume and ratch settings and roving twist factors for spinning 6 denier 4-6 inch nylon staple are reported. (3451)

ENDS DOWN AND WOOL GRADE. E. G. Sutcliffe (Samuel Hird & Sons). Textile Inds. 125: 63-66 (July 1961).
Procedures and equations for measuring the effect of wool grade on ends down in worsted spinning are presented. (3452)

COMBINED PORTABLE BLOWER AND SUCTION INSTALLATION. H. H. Popp. Textil-Praxis 16, No. 3: 236-238 (1961). In German. Through BCIRA 41: 1840 (1961).
The construction and mechanism of the Augusta-Universal installation (E. Jacobi & Co.) are described in detail. This installation cleans the spinning machines continuously by means of a blowing system, and additional suction at the balloon and floor level removes the detached fly and dust particles. (3453)

COMB-SPINNING PROCESS. F. Tobisch. Melliand Textilber. 42, No. 3: 253-258 (1961). In German. Through BCIRA 41: 1835 (1961).
Principles and construction of the comb-spinning machine, mechanism of the spinning head, adjustment and control of the mechanism, productivity of the machine, and quality of the yarn are discussed. (3454)

SIGNIFICANCE OF SPINDLE SPEED CHARACTERISTICS OF THE MaK MULE SPINNING MACHINE. W. Wegener and H. Peuker. Z. ges. Textil-Ind. 63, No. 1: 13-20; No. 2: 89-95 (1961). In German. Through BCIRA 41: 1597 (1961).
After a review of the literature dealing with twisting draft on the selfactor, the authors discuss the velocity and acceleration curves obtained by graphical differentiation from the travel-time curve of the carriage, the twist-coefficient characteristics and the specific twist curves for the MaK mule machine, the twisting, and some peculiarities of the twisting draft. The end-breakage frequency, productivity, strength, twist, length and area variations, periodograms and appearance of yarns Nm 12 from carded wool blends (38% rayon staple waste and 62% wool waste), produced at four different spindle speeds, are examined. (3455)

CARNITI HIGH DRAFT WORSTED RING FRAME. Textile Recorder 78: 73, 75 (July 1961).
The Carniti high speed large package frame is designed for spinning wool and manmade fiber yarns from twistless rovings and is fitted with the C 20 long band double apron drafting system. The system operates either on the single or the two zone drafting principle according to fiber length and can be fitted with a motion for changing the ratch along the whole of a side from a single point. (3456)

RECENT DEVELOPMENTS IN WOOLEN RING FRAMES. J. A. B. Mitchell (Scottish Woolen Tech. Coll.). Textile Mfr. 87: 226-228 (June 1961). (3457)

BETTER SPINNING RINGS AND TRAVELERS ARE POSSIBLE. P. M. Strang. Am. Textile Reptr. 75: 11-17, 98-99 (July 13, 1961).
This article aims to furnish a background of practical and scientific information to aid future textile research and development. One avenue for progress is a program in which the practical experience, acquired in over a century by spinners, by ring manufacturers, and by traveler producers, is coordinated with the current knowledge of scientists and engineers in the fields of friction, wear, heat transfer, and metallurgy. The development of an improved bearing with the ring and traveler as its components presents a challenge to the textile industry. (3458)

INVESTIGATIONS INTO THE PERFORMANCE OF RING TRAVELERS ON SPINNING RINGS OF COTTON RING SPINNING MACHINES. PARTS 11 AND 12. O. König and H. Herdtle. Textil-Praxis 16, No. 3: 243-249; No. 4: 363-369 (1961). In German. Through BCIRA 41: 1836 (1961).
This part of the investigation deals with the mathematical representation of traveler and ring vibrations. (3459)

ARUNCO 2-FOR-1 TWISTING FRAME. Arundel Coulthard & Co. Ltd. Textile Weekly 61 (1): 1235-1236 (May 26, 1961).
The redesigned twister is fitted with tape-driven, clutch-type special heavy duty spindles, designed to handle a range of between 0.5s to 4s resultant counts with ease. Other special features are noted. (3460)

## Yarns B5

ROPE THAT STOPS WATER. Oilways 27: 17-20 (June 1961).
The processing and impregnation of jute rope for Nupak oakum are described. (3461)

HIGH SHRINKAGE AND HIGH BULK ACRYLIC YARNS. Fibres and Plastics 22: 161-163 (June 1961).
Reference is made to various techniques and machines (Turbo-Stapler and Seydel converter) and the properties and uses of the yarns are described. (3462)

FANCY YARNS: PRODUCTION, PROPERTIES, AND POSSIBILITIES. N. Primentas. Textile Mfr. 87: 223-225 (June 1961).
In this article, the principles employed during making of representative types of yarn are briefly reviewed with the object of presenting some of the alternatives for new constructions and effects. 9 refs. (3463)

DIRECT CABLING MACHINES FOR TIRE CORD PRODUCTION. V. Charpentier & Cie. Textile Recorder 78: 73, 76 (June 1961).
The design of both machines described is based on the use of stationary supply packages and a cabling spindle which operates on a modified two-for-one twisting principle inserting both the ply and cabling twist in one continuous cabling operation. On one model the cabled thread so produced is wound on to a cheese; the alternative model is provided with a flyer winding system and this can be used to vary or correct the cabling twist according to manufacturers' requirements or the initial twist in the singles yarns. (3464)

DYEING AND FINISHING OF BULKED TERYLENE YARNS AND FABRICS. F. R. Smith (Imp. Chem. Inds. Ltd). Hosiery Times 34: 70-77 (June 1961). See abstr. 472/61. (3465)

MECHANISM OF FIBER FAILURE. V. A. Kargin, V. A. Berestnev, T. V. Gatovskaya, and E. Y. Yaminskaya. Doklady Akad. Nauk S. S. S. R. 122: 668-670 (1958). In Russian. Summary in Chem. Abstr. 55: 9885a (May 15, 1961).
Kapron cord fibers were subjected to repeated stretching and single tensile tests to investigate the mechanism of fiber break. (3466)

YARN HANDLING CONVEYOR SYSTEM FOR WINDING MACHINES. Hickory Spinners Plant. Textile World 111: 47-49 (June 1961).
The new yarn-handling system is built around twin conveyors on the top of the winder. These belts carry the full tubes or cones to chutes at the end of the winder, where a Veeder-Root counter counts them as they slide gently into a box. (3467)

WEFT PIRNS FOR AUTOMATIC LOOMS. German Standards Comm. Melliand Textilber. 42, No. 3: 278 (1961). In German. Through BCIRA 41: 1880 (1961).
The draft specification DIN 64 610, referring to two forms of pirn tubes (dimensions, constructional details, material) corresponds in general to the ISO Recommendation No. 143. (3468)

SOME PROPERTIES OF CONTINUOUS-FILAMENT YARN. W. Zurek (Politechnika Lodzka). Textile Research J. 31: 504-514 (June 1961).
New mathematical formulas for establishing the relationship between the properties of the yarn as functions of the twist and position of the fiber in the yarn are developed. The formulas are based on the assumption that all fibers lie along helices which have the same axis and the same number of turns per unit length, but the radius of the helix can vary along the length of the helix axis. 16 refs. (3469)

STUDIES OF CREPE YARNS. PART 6. INTERNAL FORCE DEVELOPED IN WET CREPE YARN. I. Gemma and Y. Fukushima. J. Textile Machy. Soc. Japan 14, No. 3: 188-192 (1961). Through BCIRA 41: 1604 (1961).
Measurements have been made of the detwisting moment and retractive force developed in twisted yarns when they are wetted. The crepeing power of wet twisted-yarn can be estimated by the magnitude of the detwisting force but not by the retractive force. (3470)

INTERNAL FRICTION IN FIBER ASSEMBLIES. J. D. Huffington. Brit. J. Appl. Phys. 12, No. 3: 99-102 (1961). Through BCIRA 41: 1695 (1961).
Experiments have been carried out to measure the energy dissipated as internal friction (hysteresis loss or work of deformation) when sliding rectangular steel sliders on various types of fiber assembly. It is suggested that two mechanisms of energy dissipation exist: the normal mechanism in which deformation is subject to complete elastic recovery, although energy is lost in the process, and a mechanism where work of internal rearrangement may occur which is not subject to elastic recovery, but which represents a permanent change in the yarn. The latter mechanism operates in particular with staple yarns, and it may be a wear or abrasion factor due to general sliding and loosening of fibers within the yarn. (3471)

MECHANICS OF TWISTED YARNS: THEORETICAL DEVELOPMENTS. J. W. S. Hearle, H. M. A. E. El-Behery, and V. M. Thakur (Manchester Coll. Sci. & Technol.). J. Textile Inst. 52: T197-T220 (May 1961).
The assumptions used in theoretical predictions of the tensile properties of twisted continuous-filament yarns are critically discussed. A modified theory, based on constant yarn volume during extension, is derived, and theoretical and experimental values of modulus are compared. Expressions for yarn extension and breakage at large extensions, and also taking account of deviations from Hooke's law, are derived and compared with experimental results. 13 refs. (3472)

# FABRIC PRODUCTION C

## Warping, slashing, yarn preparation C1

HATTERSLEY RW4 SECTION WARPING AND BEAMING MACHINE. George Hattersley & Sons Ltd. Textile Weekly 61 (1): 1522 (June 30, 1961).
The new machine is a modification of the RW3 designed to accommodate Sulzer-type 32 in. diameter beams. (3473)

PHOTOELECTRIC SLUB CATCHER ON WARPING MACHINES. H.-U. Franzen. Chemiefasern 11, No. 1: 43-46 (1961). In German. Through BCIRA 41: 1621 (1961).
The device described is used for controlling slubs and yarn defects. It stops the warping machine automatically. Considerable improvement of the yarn quality and increased productivity are claimed. (3474)

MACHINERY FOR THE PREPARATION OF JUTE WARPS. PART 1. G. Lee. Textile Recorder 78: 56-58 (June 1961).
Among the subjects discussed are warping speeds and productions, machines and creels for warping and sizing, and mechanical features of sizing machines. (3475)

MACHINERY FOR THE PREPARATION OF JUTE WARPS. PART 2. G. Lee (Leesona Holt Ltd). Textile Recorder 78: 53-54 (July 1961).
Optimum drying conditions for cylinder dryers and methods of stretch control on sizing machines are covered. (3476)

MEASUREMENTS ON SIZING MACHINES. H. Stein and G. Hoischen. Z. ges. Textil-Ind. 62, No. 23: 1036-1041 (1960). In German. Through BCIRA 41: 1623 (1961).
The principles of sizing machine construction (yarn-beam arrangement, sizing trough with squeezing mechanism, drying devices, warp-beaming machine) are described, and thread-tension measurements (Elmataster, Elfawinder) and changes in the elongation properties of yarn brought about by the sizing process are discussed. (3477)

OPERATION OF A NON-AUTOMATIC CHEESE WINDING MACHINE. H. Eigenbertz. Z. ges. Textil-Ind. 63, No. 2: 95-101 (1961). In German. Through BCIRA 41: 1618 (1961).
Factors to be considered to obtain optimum results when using non-automatic cheese winders are discussed, with special reference to the reduction of stresses exerted by the running thread, elimination of time-consuming manipulation, and the most economical use of manual labor. (3478)

EFFECT OF COLLOIDAL SILICA ON THE MECHANICAL PROPERTIES OF SIZED COTTON YARNS. A Barella, P. Miro, and M. del Carmen Marin. Investigacion e Informacion Textil 3, No. 4: 285-293 (1960). In Spanish. Through BCIRA 41: 1872 (1961).
Addition of a colloidal silica suspension to the sizing bath improves the resistance of yarns to repeated stretching, depending upon the concentration of the size and the nature of the product. Other parameters, such as abrasion resistance and breaking elongation, are not appreciably affected. In general, improved behavior of the yarn on the loom can be predicted. (3479)

TRANSPORT OF WARPING BEAMS BY SUSPENSION CRANES. H. Schulze. Z. ges. Textil-Ind. 63, No. 3: 177-182 (1961). In German. Through BCIRA 41: 1622 (1961).
The advantages of using suspension cranes, suspension rails, and stacking cranes for the transport of warp beams are discussed. (3480)

ECONOMIC YARN REELING. Textile Weekly 61 (2): 32, 49 (July 7, 1961).
Since tying and doffing of hanks represent the bulk of all reeling costs, it follows that the weight of the hank should be as great as possible. The production of heavier hanks by increasing width, increasing circumference, and finer crossing ratios is discussed from the viewpoint of cost reduction. (3481)

INNOVATIONS IN WEAVING PREPARATION, WITH SPECIAL REFERENCE TO AUTOMATION. K. Weigel. Z. ges. Textil-Ind. 63, No. 1: 20-32 (1961). In German. Through BCIRA 41: 1620 (1961).
Innovations in winding, warping, sizing, doubling, and weaving machinery are reviewed, and new tendencies in machine-tool manufacture are shown on several examples. (3482)

PRECISION CHEESE WINDERS FOR FINE DENIER MANMADE FILAMENTS. R. Wassmann. Chemiefasern 11, No. 1: 38-42, 46 (1961). In German. Through BCIRA 41: 1617 (1961).
Appearance, structure, denier, and twist of the material to be wound are discussed, with reference to the newly developed precision cheese winders (G. Sahm): Bikomat model for the production of conical and cylindrical double-cone rhombic bobbins (preparation for weaving and knitting or for dyeing), and Praekomat model for the production of cones and cylindrical bobbins with flat fronts (for preparatory and dyeing purposes). (3483)

FEEDING AUTOMATIC CHEESE WINDERS WITH COPS. K. Hensch. Z. ges. Textil-Ind. 63, No. 3: 174-176 (1961). In German. Through BCIRA 41: 1619 (1961).
The advantages and applicability of the transportable cop-container tipper which was originally developed for feeding automatic cheese winders, are described, the Barber Colman winding machine being given as example. (3484)

## Weaving C2

OUTPUT AND COST COMPARISON IN COLORED WEAVING USING COARSE WEFT YARNS. W. Thomas. Melliand Textilber. 42, No. 2: 164-168; No. 3: 287-290; No. 4: 400-404 (1961). In German. Through BCIRA 41: 1882 (1961).
The output and cost comparison for various loom types and different weaving methods is illustrated by an example from a blanket weaving plant. (3485)

FACTS ABOUT SHUTTLELESS LOOMS. R. B. Pressley. Textile World 111: 30-34 (July 1961).
This complete report on the replacement of 240 conventional looms by 200 Draper shuttleless looms at Carolina Mills, Newton, North Carolina, includes information on productivity, employee workloads, manpower requirements, and cost of changeover. (3486)

JACQUARD WEAVING. D. De Jonghe, V. Galens, and M. Tavernier. Rev. Textilis 16, No. 12: 41-43 (1960). Textilis 17, No. 1: 37-39; No. 2: 25-28 (1961). In Dutch. Through BCIRA 41: 1626 (1961).
For previous parts see abstr. 3923/60 and 1973/61. (3487)

MODERN PREPARATORY AND WEAVING MACHINERY AND POSSIBLE TRENDS. PART 3. P. Stucki. Textile Weekly 61 (1): 1243-1246 (May 26, 1961). (3488)

WEFT-INSERTING MECHANISMS. D. Bracke and O. Van Looken. Rev. Textilis 16, No. 12: 23-32, 65 (1960). Textilis 17, No. 1: 32-35; No. 2: 36-42; No. 3: 27-32 (1961). In Dutch. Through BCIRA 41: 1625 (1961).
For previous parts see abstr. 3922/60, 94/61, and 1977/61. (3489)

AUTOMATIC PIRN CHANGER FOR SAURER 100W LOOM. J. Schneider. Z. ges. Textil-Ind. 63, No. 2: 105-108 (1961). In German. Through BCIRA 41: 1624 (1961).
The loom has been fitted with a vertical, 2, 4, and 6-color automatic pirn changer for the production of colored double-weft fabrics in up to 6 colors. The pirns are removed from the respective battery box by a shuttle-guard device, which offers them to the automatic change motion. (3490)

VALENTIN BOX LOADER. H. Sannig. Melliand Textilber. 42, No. 3: 279-282 (1961). In German. Through BCIRA 41: 1879 (1961).
The individual working components and operation of the Valentin box loader are described. (3491)

UNIVERSAL LANSCO WILTON WIRE LOOM. Wilson & Longbottom Ltd. Textile Recorder 78: 71-72 (June 1961).
The loom is suitable for the production of one, two, or three shot weaves and can be operated with needle or shuttle weft insertion and one or two wire motions. (3492)

PROGRESS IN WILTON WEAVING. A. Crossland. Textile Recorder 78: 57-59 (July 1961).
Trends and developments in Wilton carpets and carpet looms are described. (3493)

PLASTICS FOR LOOM ACCESSORIES. Brit. Picker Co. Ltd. Textile Weekly 61 (1): 542-543 (Mar. 10, 1961).
The advantages and applications of polythene plastic are described. (3494)

AIDS TO THE LOOMFIXER. Fibre and Fabric 114: 23 (June 1961).
Adjustments of the BA Type Draper-Diehl Power Transmitter for X-2, XP-2, XD, and XP Draper looms are outlined. The transmitter settings are the same on looms equipped with either a center fork or side fork filling motion. (3495)

DEVELOPMENT OF LOOMS. PART 3. T. B. Vaswani. Silk Rayon Inds. India 4: 16-18 (Apr. 1961).
Historical survey of loom development. (3496)

PICANOL PRESIDENT SINGLE-SHUTTLE HIGH-SPEED LOOMS. R. S. Maynard. Textile Weekly 61 (1): 1191-1196 (May 19, 1961); 1250 (May 26, 1961).
Features of the following are described: CC-C, a light high-speed loom with inside tappets for working with up to 8 staves; CM-C loom for medium to heavy cloth which is supplied either with inside tappet motion, with negative dobby for 12, 16, or 20 staves, with positive dobby without top rail for the same number of staves, or with jacquard machine; and CL-C loom which is the wide loom from 79 in. to 118 in. reedspace, with either inside tappets, dobby, or jacquard. (3497)

## Knitting C3

HOW TO INHIBIT RUBBER DETERIORATION IN SWIMSUIT FABRICS. M. W. Levi (Richmond Oil, Soap & Chem. Co.). Knitted Outerwear Times 30: 24 (July 17, 1961).
By the selection of rubber-compatible rubber lubricants in the throwing operation, for raw rubber lubrication in knitting, and for needle oiling, rubber deterioration and fabric staining can be circumvented. The properties and uses of suitable Rubberknit lubricants are described. (3498)

HOW TO CONTROL PICKS AND PULLS IN FF HOSIERY. R. D. Brackett. Textile Inds. 125: 149, 151 (June 1961). (3499)

SEAMLESS HOSIERY ASCENDANCY IS HERE TO STAY. B. Lange (Marketects Inc.). Knitter 25: 42-45 (June 1961).
A marketing analyst's report on the growing trend from full-fashioned to seamless hosiery. (3500)

SUPPORT STOCKINGS. PART 2. G. A. Urlaub. Modern Textiles Mag. 42: 39-42 (July 1961).
The machinery used in support stocking manufacture and the medical acceptability of the stockings are discussed. The patent and marketing situation are analyzed. See abstr. 2918/61 for Part 1. (3501)

TEN-YEAR STORY OF U.S. HOSIERY INDUSTRY (1950-1960). Nat. Assoc. Hosiery Mfrs. Knitter 25: 31-33 (June 1961).
Summary of statistical report covering productivity, plants, employees, and exports and imports. (3502)

REMEDY FOR UNEVEN STITCHES ON SCP, SCOP, CK-A, AND OTHER MULTIFEED CIRCULAR HOSIERY MACHINES. W. Shewmake. Textile Inds. 125: 153, 155 (June 1961).
Directions for constructing and using a simple gage to level knitting cams are given. (3503)

KNITS: GROWING COMPETITION FOR WOVENS. Textile Inds. 125: 120-122 (July 1961).
The impact of double jerseys, knit fabric/foam laminates, and resin finished tubular fabrics on traditional woven fabric markets is briefly outlined. (3504)

USES OF THE TUCK STITCH. J. B. Lancashire. Hosiery Trade J. 68: 158-161 (June 1961). (3505)

MORETTA DR-2 TWIN-FEED SEAMLESS HOSE MACHINE. Vernon H. Cooper Ltd. Hosiery Times 34: 31-35, 100 (June 1961).
Among the distinctive features of the machine are: large control drum; patented method of putting into action the second feed in order to prevent large loops and runs; double welt attachment; attachment for reinforcing the sole; hollow sinker; and positive yarn feed. (3506)

CONTINUOUS PANEL YARN SUPPLY FOR STOCKING KNITTING. Brit. Nylon Spinners Ltd. Advance Report No. 38. Apr. 1961. 4 p.
A magazine transferring system suitable for stocking machines which provides a continuous panel yarn supply, with no waste of yarn or knitting time, is described and illustrated. (3507)

NEW PROSPECTS IN DOUBLE JERSEY YARDGOODS OF ACRILAN. A. R. Schlesinger (Chemstrand Corp.). Knitted Outerwear Times 30: 7, 31 (July 10, 1961).
The reasons for the growing use of Acrilan for double jersey fabrics are outlined. (3508)

HOW KNITFABS PRODUCES DOUBLE JERSEY. C. Reichman. Knitted Outerwear Times 30: 3-7 (July 10, 1961).
The machinery and techniques used by Knitfabs Corp. are briefly described. (3509)

TOO MANY NARROWING DEFECTS? R. D. Brackett. Textile Inds. 125: 123, 135-136 (July 1961).
Corrective and preventive measures for minimizing narrowing defects in full-fashioned fabrics are described. (3510)

U.S.A. ACTIVITY IN KNIT PAPER YARNS. Hosiery Trade J. 68: 119-120 (June 1961).
The slitting, knitting, and applications of paper yarns are briefly noted. (3511)

EUROPEAN KNITTING DIARY. R. Innes. Hosiery Trade J. 68: 129-132 (June 1961).
Among the developments reviewed are: Cyclotric dye jigger (Poesgen GmbH); Bower R/15 and R/25 combined cleaning and milling machines for knitwear (Bohler & Weber AG); Nebel run-resistant seamless hosiery; full-fashioned knitwear on circular machines; positive yarn feed attachment for straight bar machines; electric stop motion for circular knitting machines. (3512)

KNIT-AID: DEVICE FOR CONTROLLING THE TENSION OF YARN IN HAND KNITTING. K. R. Makinson (CSIRO Wool Research Labs.). Textile J. Australia 36: 378-381 (Mar. 20, 1961).
The Knit-Aid is a device which can be worn upon the fingers of either hand to give control of the tension of yarn during hand knitting in either the English or the German style. The main tensioning component is a pair of tension discs of the type used on sewing machines, held together by a spring. The results obtained by use of the device are described. (3513)

PRINCIPLES OF KNITTING OUTERWEAR FABRICS AND GARMENTS: A MANUAL ON BASIC STITCH FORMATIONS AND MACHINE TYPES. C. Reichman, ed. Nat. Knitted Outerwear Assoc., 386 Park Ave. South, New York 16, N.Y. 1961. 193 p. $7.95.
Consists primarily of articles that appeared in the Knitted Outerwear Times. (3514)

FUNDAMENTALS OF WARP KNIT ENGINEERING. PART 10. A. Reisfeld (Gehring Textiles, Inc.). Knitted Outerwear Times 30: 5-11, 28-29 (July 3, 1961).
The main methods available for physical modification of yarns and their application in warp knitting are reviewed. 10 refs. (3515)

PRACTICAL HINTS FOR KNITTERS. PART 8. FASHIONED UNDERWEAR AND KNITWEAR MACHINES. Hosiery Trade J. 68: 138-139 (June 1961).
Pointers on cleaning, lubrication, and sources of knitting faults on Cotton's Patent type machines. (3516)

## Fabrics C4

NOTE ON DIRECTIONAL EFFECTS IN THE ABRASION OF COTTON SATEEN. L. I. Weiner (U.S. Quartermaster Research & Eng. Center). (Letter to the editor). Textile Research J. 31: 580-582 (June 1961). (3517)

RESIN BACKING OF TUFTED CARPETS. D. A. Goltz. Melliand Textilber. 42, No. 3: 334-337 (1961). In German. Through BCIRA 41: 1935 (1961).
Pile firmness and resistance to weather, light, aging, and drycleaning of tufted carpet with resin backing are examined, brief reference being also made to chemical and physical factors. (3518)

INVESTIGATIONS ON THE MODIFICATIONS OF YARN AND FABRIC STRUCTURE NEEDED TO IMPROVE TEAR STRENGTH OF COTTON FABRICS. E. J. Stavrakas and M. M. Platt. U.S. Agri. Research Serv., Washington 25, D.C. Jan. 1961. 16 p. ARS 72-19.
Results of this study of the effect on tear strength of variations in yarn and fabric geometry indicate that there are two effective means for modifying fabric structure to improve its tear strength properties. These are: (1) utilization of appropriate weaves and textures that will enhance the mobility of the yarns in the del and distortability of the fabric in parallel with the del; and (2) the use of yarns having, by virtue of their size, construction, or preparation, more desirable tensile properties. (3519)

INFINITESIMAL PLANE STRAIN IN A NETWORK OF ELASTIC CORDS. S. M. Genensky and R. S. Rivlin. Arch. Rat. Mech. Anal. 4, No. 1: 30-44 (1959). Through BCIRA 41: 1705 (1961).
In an earlier paper (J. Rat. Mech. Anal. 4: 951/1955), the problem was considered of plane strain in a sheet of fabric consisting of a network formed by two families of parallel, inextensible, perfectly flexible cords that cannot move relative to each other at their points of intersection. In the present paper a similar problem is considered, when the cords are extensible and elastic. (3520)

DESIGN IN WOVEN STRUCTURE: CHECK PATTERNS. D. C. Snowden. Wool Rev. 34: 14-15 (May 1961). (3521)

DALTOFLEX FOAMBACK MACHINE. Viking Eng. Co. Ltd. Skinner's Silk & Rayon Record 35: 646-647 (July 1961).
The Daltoflex machine is an adhesive laminating machine based on the use of the Daltoflex transfer spreading process (Imp. Chem. Inds. Ltd). A diagram of the machine is included. (3522)

HOW TO DESIGN AND LAY OUT MULTIPLE FABRICS. PART 1. E. B. Berry. Textile Bull. 87: 62-68, 76 (July 1961).
The development of a weave for pillow tubing and for double width fabrics is described. (3523)

AIR STRUCTURES: PROMISE OR PITFALL? Canvas Products Rev. 37: 31, 56-57 (July 1961).
The critical elements to be considered in engineering an air-supported building (e.g. size, shape, type of fabric, climatic conditions, anchorage, and maximum pressure load) are discussed. The importance of fabric type and coating and their adhesion is stressed. (3524)

EFFECT OF SPECIFIC PRESSURE FORCES DURING VULCANIZATION ON THE PROPERTIES OF CONVEYOR BELTS AND A PROPOSED METHOD FOR EVALUATING CONVEYOR BELTS. W. Bobeth and A. Heger. Faserforsch. u. Textiltech. 12, No. 1: 1-8 (1961). In German. Through BCIRA 41: 1706 (1961).
The effect of specific pressure force during vulcanization on the stress-strain diagram and, consequently, on the accurate dimensions of conveyor belts is discussed, and a calculation method developed by the authors is compared with the method specified in DIN 22 101. (3525)

PROPERTIES OF NONWOVEN FELTS OF 100% DACRON. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. May 1961. 8 p. Bull. D-136 (replaces Bull. D-95). Free.
Data on physical properties and chemical resistance are presented as a guide to expected performance. (3526)

SELECTION OF FILTER FABRICS RE-EXAMINED. S. Ehlers (Am. Mach. & Metals, Inc.). Ind. Eng. Chem. 53: 552-556 (July 1961).
Check list for selecting the best filter media. (3527)

EMCO FOAM LAMINATING MACHINE. K. P. Williams Inc. Dyer 125: 971, 975 (June 30, 1961).
This new machine is designed to join knitted and woven fabrics with polyester urethane foam of any thickness to 1/2 in. (3528)

POLYURETHANE FOAM IN CLOTHING. PART 1. WHY FOAMBACKS? L. Weinstock. Man-Made Textiles 38: 46-50 (June 1961).
The advantages of polyurethane foams in clothing and their basic chemistry, properties, and general characteristics are discussed. (3529)

POLYURETHANE FOAM IN CLOTHING. PART 2. QUILTING, ADHESION, AND FUSION LAMINATING METHODS. L. Weinstock. Man-Made Textiles 38: 39-41 (July 1961).
The author discusses the combining of foams to fabrics by quilting, adhesion, and fusion laminating methods, the advantages each provides, and where each can be used to the best advantage. (3530)

SYSTEMS FOR BONDING POLYURETHANE FOAM TO TEXTILES. D. M. Woodford and B. N. Malkin (Scott Bader & Co. Ltd). Man-Made Textiles 38: 61-62 (June 1961).
Three systems are in use for combining foams to fabrics. These can be generally described as flame bonding, adhesive bonding using a solvent base, and adhesive bonding with an aqueous base. These techniques and their peculiarities are described. (3531)

LAMINATED KNITS REVIEW. Knitted Outerwear Times 30: 3-45 (June 26, 1961).
This special issue on foam laminated knitwear includes the following articles of technical interest: Laminates: a new knitwear dimension, by C. Reichman, p. 3-9; Fabrics-to-foam materials: a fast growing field, by H. S. Howard, p. 9, 13; Nylco products builds equipment for flame lamination, by E. K. Langille, p. 11-13; How Reeves Bros. laminates knit cloth to Curon foam, p. 15; Rigid controls help Nopco maintain foam quality, by R. Singer, p. 17, 33; Polydynamic bakes and cures laminates to hold finish, by A. Siegler, p. 19, 65, 68; How polyurethane foam is manufactured and used, by J. W. Hull, p. 27-29. (3532)

MIGRATION OF LIQUIDS IN TEXTILE ASSEMBLIES. PART 4. PENETRATION OF FABRICS BY LIQUIDS. F. W. Minor and A. M. Schwartz (Harris Research Labs.), L. C. Buckles, E. A. Wulkow, and M. P. Marks (U.S. Army Chem. Warfare Labs.), and G. H. Fielding (U.S. Naval Research Lab.). Textile Research J. 31: 525-539 (June 1961).
The present studies deal with the factors which influence all three types of penetration, capillary, pressure, and impact, through representative military apparel fabrics. The experimental program consisted first in developing satisfactory methods for separating and measuring each of the three types of penetration. These methods were then used to study penetration quantitatively in a variety of liquid-fabric systems, attempting to relate penetration behavior to specific characteristics of both the liquid and the fabric. 3 refs. (3533)

EAST GERMANS PROGRESS WITH SEWING-KNITTING TECHNIQUES. Skinner's Silk & Rayon Record 35: 634-636 (July 1961).
The sewing-knitting technique is based on the principle of putting warp and weft together in layers, and connecting them by parallel seams made by sewing machines. The chain stitch chosen has the advantage of allowing for a continuous supply of thread and therefore a continuous seam. Three machines are made to carry out these processes: the Malimo 500, the Maliwatt Komplett, and the Malipol 750 (Tüllmaschinenbau). The features and operation of the machines are described in detail. (3534)

TEXTRYLS AND FIBRIDS. PART 1. NEW NON-WOVENS PRODUCED BY PAPERMAKING TECHNIQUES. Fibres and Plastics 22: 165-168 (June 1961).
A continuous system for the preparation of fibrid stock is described. (3535)

TEXTRYLS AND FIBRIDS. PART 2. PRODUCTION METHODS FOR TEXTRYLS. E. I. du Pont de Nemours & Co. Fibres and Plastics 22: 201-205 (July 1961).
Machinery and methods for stock and textryl formation and techniques for varying the properties of the textryls are covered. (3536)

THERMOPLASTICS: C & EN COMMODITY SURVEY. W. S. Fedor. Chem. Eng. News 39: 80-92 (May 29, 1961). (3537)

TECHNIQUE TO PREVENT FABRIC FRAYING AND SEAM FAILURE. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. May 1961. 3 p. Bull. X-135 (replaces Bull. X-120). Free.
The technique involves spraying or painting an alcohol solution of Zytel 61 nylon resin to the cut edges of fabric followed by air drying. (3538)

AIR FLOW CHARACTERISTICS OF PARACHUTE FABRICS AT SIMULATED HIGH ALTITUDES. C. V. Seshadri, G. A. Brown, S. Backer, J. G. Krizik, and D. M. Mellen (Mass. Inst. Technol.). Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. Mar. 1960. 153 p. WADC tech. report 59-374.
This report presents the results of experiments and analyses conducted on the phenomena of air flow through parachute fabrics, with each of 3 parameters controlled independently. Part 1 deals with simulated high altitude flow and constitutes a study of density effects over a wide range of pressure differentials. Part 2 treats the stress buildup and accompanying fabric distortions as they influence air flow, independent of changes in pressure differential. The role of pore geometry in influencing cloth permeability is explored. (3539)

DESIGN AND EVALUATION OF HEAT STABILIZED TAPES AND WEBS. J. Serbin and H. Becker. Wright Air Development Division, Wright-Patterson Air Force Base, Ohio. Oct. 1960. 70 p. WADD technical report 60-252.
Experiments on the development of a method for heat stabilizing nylon and Dacron webs and tapes for parachute use are described. (3540)

INSTANTANEOUS LOCAL TEMPERATURES OF AERODYNAMIC DECELERATORS. PART 2. THERMAL PROPERTIES. E. Engholm, S. J. Lis, and R. A. Bambenek. Wright Air Development Division, Wright-Patterson Air Force Base, Ohio. Feb. 1961. 96 p. WADD tech. report 60-670, pt. 2.
Measurements were made of the thermal conductivity of the following candidate parachute fabrics: nylon, stainless steel, glass, graphite, and AF-1 (an organic fiber). A new apparatus was developed in order to determine fabric conductivity under varying conditions of temperature (212 to 600° F), ambient pressure (15 to 0.048 psia), biaxial tension (0 to 90 ppi), and compression (1 to 10 psi). Initial data collected using the apparatus demonstrated its capabilities and analysis of these data indicate the possibility of further dimensionless correlations in which the effects of biaxial tension may be negligible. (3541)

SEWING FABRICS OF DU PONT FIBERS. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. June 1961. 11 p. Bull. X-136 (replaces Bull. X-93). Free.
This bulletin describes conditions and factors affecting seam appearance and durability, and discusses preferred sewing techniques for garments made from fabrics containing either Du Pont nylon, Orlon acrylic, or Dacron polyester fiber. (3542)

WEARING QUALITIES OF SELECTED NEW MEXICO WOOLS. PART 1. STRENGTH AND ELONGATION. J. S. Lee, H. F. Barbour, and M. D. Finkner (Agri. Exp. Sta., New Mexico State Univ.). Textile Research J. 31: 540-550 (June 1961).
Four lots of wool fiber, selected for fineness and crimp, were manufactured into comparable tropical worsted fabrics for wear in outer garments by girls 6 to 16 years of age. Breaking strength and elongation were used to measure the changes in the fabrics with wear. The breaking strength of the warp and of the filling of the fabrics made from the fine wools was greater than for the medium wool. Loss in fabric strength was a linear function of the hours of wear. Fabric elongation decreased with hours of wear, but generally, in a less direct fashion than did the strength. The backs of the garments and the filling yarns in the backs lost most strength and elongation with wear. 22 refs. (3543)

INVESTIGATION ON THE EFFECT OF PREPARATORY FINISHING AND RESIN TREATMENT ON THE TEAR STRENGTH OF VARIOUS COMMERCIAL COTTON FABRICS. E. J. Stavrakas and M. M. Platt. U.S. Agri. Research Serv., Washington 25, D.C. Jan. 1961. 22 p. ARS 72-18.
Changes in tear strength of cotton fabrics due to desizing, scouring, bleaching, dyeing, and resin finishing were analyzed to determine the causes of tear strength loss due to resin treatment. (3544)

FIBER EFFECT ON RESIN-TREATED COTTON SHEETING. M. C. Jenkins (La. State Univ.). J. Home Econ. 53: 453-456 (June 1961).
This study was developed to investigate the relationship of certain fiber properties--strength, elongation, and crystallinity--to the laboratory performance of sheeting fabric before and after treatment with a resin commonly used to impart "wash-wear" characteristics to cotton fabrics. (3545)

WASH AND WEAR SHIRT PERFORMANCE FOUND LACKING IN UNIVERSITY STUDY. Cleaning Laundry World 82: 38-40 (Apr. 1961).
The specific objective of this study was to determine the effect of various laundering methods on the wrinkling of wash and wear cotton shirts and fabric squares. A panel of five trained members and 50 consumers rated the appearance of the shirts. Results show that wash and wear dress shirt acceptability is low. (3546)

FELTING AND TIP WEATHERING OF WOOL. G. F. Flanagan (C.S.I.R.O. Wool Research Labs.). (Letter to the editor). Textile Research J. 31: 576-577 (June 1961). (3547)

TUFTING SURVEY. Man-Made Textiles 38: 65-79 (June 1961).
The survey includes information on: expansion in the British tufting industry; developments in machinery, backing cloths, backing compounds, and carpet printing. (3548)

SHRINKAGE OF MANMADE FIBER FABRICS. PART 3. M. T. Mehta. Silk Rayon Inds. India 4: 9-12 (Apr. 1961).
The percentage shrinkage in viscose linen, brocade, and sateen type fabrics is reported. For previous parts see abstr. 2013/61 and 2964/61. (3549)

## FINISHING D

DYEING AND FINISHING OF DACRON POLYESTER STAPLE WITH CELLULOSIC FIBERS. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. June 1961. 20 p. Bull. D-135 (replaces Bull. D-124). Free. (3550)

RECENT FOREIGN DEVELOPMENTS IN WET PROCESSING. J. B. Goldberg. Can. Textile J. 78: 49-55 (July 7, 1961).
In this review of products, methods, and machines, foreign developments in desizing, bleaching, mercerizing, scouring, dyeing, printing, and finishing are discussed. (3551)

REVIEW OF DYEING AND FINISHING ORLON SOCKS IN THE HOSIERY DYE HOUSE. H. White (Malma Hosiery Co.). Hosiery Underwear Rev. 44: 71-73, 81 (June 1961). (3552)

DYEING AND FINISHING OF KNITTED GOODS. E. R. Trotman. Cobbler 13: 56-60 (1960-61). (3553)

## Chemical processes D1

RECENT OUTSTANDING IDEAS IN TEXTILE PROCESSING. B. C. M. Dorset. Textile Mfr. 87: 243-248 (June 1961).
The following developments are discussed: Melafix CH and Melafix II processes for shrinkproofing wool by wet chlorination; oil and water repellent finishes; cotton flameproofing combined with crease and shrink resistance (BP 799 606); flameproof acetate and triacetate fibers (BP 858 582); nylon flameproofing with thiourea and urea formaldehyde resins; wool modification with diisocyanates. (3554)

CONTINUOUS WEIGHT MEASUREMENTS ON TEXTILES BY MEANS OF RADIATION DEVICES. K. Zitz. Z. ges. Textil-Ind. 62, No. 23: 1044-1047 (1960). In German. Through BCIRA 41: 1665 (1961).
The FH46 electronic installation described is based on measuring the radiation absorption of radioactive substances. The radiation emitted by the radiator penetrates into the textile material and is partly absorbed by it, while the remainder passes through the material and is intercepted by a measuring device. The installation (Frieseke & Hoepfner GmbH) is particularly suitable for controlling the processes taking place during setting, coating, and impregnating. (3555)

BLEACHING OF TEXTILES: SCIENCE AND ART OF BLEACHING. G. A. Lunger (Du Pont of Canada Ltd). Can. Textile J. 78: 41-44 (July 7, 1961).
The paper discusses some of the bleaching techniques now in general use, as well as some recent developments. Data are presented on the uses of hydrogen peroxide, sodium chlorite, potassium monopersulfate, sodium hypochlorite, and sodium hydrosulfite as used in the bleaching of cotton, wool, and synthetic fiber blends. (3556)

FIBROUS ACETYLATION OF COTTON. PART 3. PROPERTIES OF ACETYLATED COTTON. W. Tsuji, R. Kitamaru, and M. Imai. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 235-242 (1961). In Japanese (English summary). Through BCIRA 41: 1673 (1961).
Cotton fabrics were acetylated, and tensile properties, water and moisture absorption, specific gravity, microscopic structure, thermal and electric properties, abrasion resistance, weathering resistance, resistance to acids, flammability, dyeability, and shrinkage in boiling water, and soiling and soil removal were examined. (3557)

SURFACE COATING AND IMPREGNATING FABRICS. Fibres and Plastics 22: 206-207, 210 (July 1961).
The first part of this survey outlines the design and applications of the basic types of surface coating units, e.g. bar, simple and dual knife, roll backed-up knife, and reverse roll coaters. (3558)

ADVANTAGE OF STANDARDIZING SCOURING ASSISTANTS. H. Fritzsch and G. Pfüller. Deut. Textiltech. 11, No. 2: 91-95 (1961). In German. Through BCIRA 41: 1643 (1961).
Sixteen scouring assistants were examined to ascertain their quality-determining properties. The values obtained are tabulated. (3559)

COATING OF TEXTILES WITH POLYURETHANES. O. Glenz and F. Kassack. Melliand Textilber. 42, No. 3: 323-328 (1961). In German. Through BCIRA 41: 1936 (1961).
The chemical principles, on which the properties of polyurethane coatings are based, are discussed and preparation and application of the pastes, as well as general problems concerning the required machinery and the potential uses of polyurethane-coated textiles are described. (3560)

CURRENT ENZYMATIC DESIZING TECHNIQUES. J. A. D. Hall (Norman Evans & Rais Ltd). Dyer 125: 727-730 (May 19, 1961).
The various methods described include those which are in full-scale daily use, those which are in experimental use on either a large or small scale, and a final section consisting of thoughts which may form the basis for future planning. (3561)

LAMINATED URETHANE FOAMS. D. S. Lyle. Nat. Inst. Drycleaning, Silver Spring, Md. Apr. 1961. 4 p. Bull. FF-80.
Following a brief discussion of the possibilities of shrinkage, separation, and discoloration during drycleaning, information on foam types and methods of bonding is given. A table of trade names is included. (3562)

DO-IT-YOURSELF DRYCLEANING. S. M. Suchecki. Textile Inds. 125: 101, 107 (July 1961).
The problems and opportunities presented by coin-operated drycleaning machines to the textile industry are briefly surveyed. (3563)

DAMAGE TO WOOL BLANKETS BY REPEATED DISINFECTION BY FORMALDEHYDE VAPOR IN VACUO AT MODERATELY RAISED TEMPERATURES. H. Caplan and J. C. Dickinson. (Letter to the editor). J. Textile Inst. 52: T248-T250 (May 1961). (3564)

TESTS ON MOTHPROOFING PRODUCTS. J. R. Wiebush. Nat. Inst. Drycleaning, Silver Spring, Md. Apr. 1961. 4 p. Bull. T-394.
This bulletin indicates the mothproofing qualities of commercial mothproofing products which are available to drycleaners. No tests were made to evaluate claims of mildewproofing or claims of retarding odor development in garments. (3565)

ROTPROOFING TREATMENTS FOR TEXTILES. J. David. Dyer 125: 803-804 (June 2, 1961).
Methods of protecting textiles against fungal and bacterial attack by rotproofing agents and by chemical modification are briefly reviewed. (3566)

EFFECT OF SODIUM SULFITE ON CAPILLARY PROPERTIES OF COTTON FABRICS IN KIER BOILING. V. M. Bel'tsov. Tekhnol. Tekstil. Prom. No. 1: 153-156 (1958). In Russian. Through BCIRA 39: 1298 (1959).
An addition of 20 g/l decolorizes the kier liquor and the goods are whiter, but the capillary properties and heat stability are not improved. (3567)

STIMULUS AND RESPONSE. G. W. Madaras and S. N. Bradshaw (Courtaulds Ltd). Dyer 125: 944-945 (June 30, 1961).
The development of wash-and-wear finishes for cotton and viscose rayon and the problems of assessment of the finishes are discussed. (3568)

COMPARISON OF ULTRAVIOLET LIGHT ABSORBERS FOR PROTECTION OF WOOL AGAINST YELLOWING. W. G. Rose, M. K. Walden, and J. E. Moore (Western Reg. Research Lab.). Textile Research J. 31: 495-503 (June 1961).
The substances tested were evaluated by measuring the change in the reflectance of treated and untreated wool cloth, after irradiation with several light sources. Great differences were observed in the protection obtained from substances having similar strong absorption spectra in the ultraviolet. Substituted benzophenones were effective protective agents, but the method of application is important. The best results were obtained with sulfonated substituted benzophenones, applied from hot, aqueous solutions having a pH of about 1.5. The implications of these results are briefly discussed. 11 refs. (3569)

CHEMICAL SHRINKPROOFING OF COTTON TWILL FABRICS. F. Nestelberger. Textil-Rundschau 16, No. 2: 55-63 (1961). In German. Through BCIRA 41: 1671 (1961).
Fundamental problems concerning the shrinkproofing of cotton fabrics with resins are discussed, with special reference to the combination of resins with starch products; the addition of starch is claimed to improve wet-creasing of the finished fabric. Difficulties encountered in this case during determination of the resin content by acid hydrolysis and the necessity of developing a simple method enabling determination of the true resin content in the presence of any accompanying substances are pointed out. (3570)

SOLVENT-EXTRACTION OF DETERGENT-SCOURED WOOL. R. G. Stewart (N. Z. Wool Inds. Research Assoc.). J. Textile Inst. 52: T241-T247 (May 1961).
The extraction of detergent-scoured wool with various solvents has been studied. Some solvents have yielded extracts containing considerable quantities of free fatty acids, and the significance of this in the mechanism of solvent extraction is discussed. Oven-drying at 60° C for 48 hr has been shown to reduce the quantity of material extractable by solvents. 14 refs. (3571)

KIER-BOILING OF COTTON FABRICS IN THE PRESENCE OF SODIUM SULFITE. M. G. Kachurin and others. Tekhnol. Tekstil. Prom. No. 6 (13): 98-103 (1959). In Russian. Through BCIRA 40: 1204 (1960).
The paper published previously by V. M. Bel'tsov is critically analyzed, and it is shown that the above author, who carried out his experiments on a laboratory scale only, omitted mention of the main industrial advantage of the sulfite kier-boiling process (possibility of increasing the productivity of the boilers), underestimated the qualitative properties of the treated product, limited, without reason, the applicability of the process, and misrepresented the purpose of introducing it. The experiments described were carried out to prevent the consequences and effects which the above paper may have on the wider industrial application of this effective process. (3572)

COMPOUNDS FOR CREASE RESISTANCE: THE URONS. J. T. Marsh. Textile Recorder 78: 55-56 (July 1961).
Uron is the hypothetical parent substance of a family of compounds derived from the reaction of urea with 4 molecules of formaldehyde. This type of compound is of particular interest due to its theoretical freedom from chlorine retention since it has no available imino-hydrogen sites. Some of the latest developments in this field are discussed. 7 refs. (3573)

SCOURING OF WOOL. Dyer 125: 797-798 (June 2, 1961).
The main types of natural and process impurities in wool and the systems used for their removal are briefly reviewed. (3574)

SOLVENT DEWAXING OF COTTON. S. M. Suchecki. Textile Inds. 125: 125-126, 147 (June 1961).
Method and economics of removing cotton wax continuously with trichloroethylene are described. (3575)

SOIL RESISTANT FINISHING OF FABRICS. T. Matsukawa. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 277-283 (1961). In Japanese. Through BCIRA 41: 1664 (1961).
Review. 52 refs. (3576)

HYDRO-PRUF SILICONE FINISHES. Arkansas Co. Modern Textiles Mag. 42: 28, 61 (July 1961).
The Hydro-Pruf finishes are aqueous milky emulsions containing a complex combination of silicone resin and resin-forming chemicals. Among the advantages of these waterproofing finishes is their ability to improve abrasion resistance, spot resistance, sewability, and stability, as well as the fact that no color change is produced by them on naphthol dyed fabrics. (3577)

EFFECT OF FILLING YARN TWIST UPON THE PROPERTIES OF COTTON FABRICS BEFORE AND AFTER RESIN TREATMENT. E. Meshke (Univ. Calif.). Am. Dyestuff Reptr. 50: P487-P493 (June 26, 1961).
Five samples of 24s cotton yarn, ranging from low to high twist, were spun and used for the filling in experimental fabrics of plain weave and average setts. The yarn with average twist, highest strength, and least variability was used for two additional test fabrics; one of low sett and one of high sett. One half of the total length of fabric was tested for crimp, weight, thickness, tear strength and crease recovery and one half given an ethylene urea-formaldehyde resin treatment and the tests repeated. Interpretations of test results indicate the importance of fabric geometry and the influence of yarn twist upon the properties of resin-treated cottons. 4 refs. (3578)

USE OF MODERN HOME LAUNDRY EQUIPMENT. PART 1. WRINKLING EFFECTS ON SWATCHES OF PRESENT-DAY FABRICS. R. K. Taube, E. S. Ross, and N. D. Poole (U.S. Dept. Agri.). Am. Dyestuff Reptr. 50: 468-479 (June 26, 1961).
This study of laundering procedures investigated wrinkling effects on 27- x 30-inch swatches of 27 different fabrics of Arnel, cotton, Dacron, nylon, and Orlon fibers and some blends of these, through 9 launderings. Subjective judgments of the need for ironing of fabrics were used throughout to evaluate effects of such variables as type of washer, weight of load, wash and rinse-water temperatures, speed of agitation, length of wash, speed of spinning, and various aspects of drying methods. For evaluation of effects of some variables, wrinklemeter and crease-recovery measurements were also used, and were themselves evaluated as measurement tools. 10 refs. (3579)

CROSS-LINKING: WASH-AND-WEAR WITHOUT RESINS. S. P. Young. Textile Inds. 125: 113, 136-137 (July 1961).
The advantages of cross-linking cellulose with monomers such as epichlorohydrin, formaldehyde, and divinyl sulfone and the commercial developments in this field are briefly surveyed. (3580)

ACRYLIC RESINS IN TEXTILE PROCESSING. A. C. Nuessle and B. B. Kine (Rohm & Haas Co.). Textile J. Australia 36: 580-585, 608-610, 613 (May 20, 1961).
The paper is concerned with textile uses of acrylics, and especially with some of the chemical and physical properties responsible for their utility in certain applications. Other polymer types are mentioned where it is desirable to show similarities or differences. 13 refs. This article was originally published in Industrial and Engineering Chemistry in 1953. (3581)

EFFECTS OF TENSION DURING RESIN TREATMENT ON PHYSICAL PROPERTIES OF COTTON FIBERS AND YARNS. R. S. Orr, A. W. Burgis, and J. N. Grant (So. Reg. Research Lab.). Textile Research J. 31: 550-557 (June 1961).
The objectives of the present investigation were to: establish the effects of tension during the processes of treating cottons with resin, on the strength, elongation, and elastic recovery properties as measured from the single fibers, fiber bundles, and yarns; and furthermore, it was desired to ascertain whether the decreases in strength and elongation were caused by the resin coating of fibers or by the bonding of internal fiber elements in positions unsuitable for achieving maximum strength. Finally, efforts were made to determine what combinations of chemical pretreatments, tension during treatment, and selection of cottons will improve the qualities of resin-treated fabrics. 11 refs. (3582)

STUDIES ON CYANOETHYLATED VISCOSE RAYON. PART 1. CYANOETHYLATED CELLULOSE XANTHATE. PART 2. FINE STRUCTURE OF THE CYANOETHYLATED CELLULOSE FIBER AND ITS REACTIVITY TO MELAMINE RESIN. M. Yajima and I. Inoue. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 253-262 (1961). In Japanese (English summary). Through BCIRA 41: 1572 (1961).
Part 1. The reaction of acrylonitrile with cellulose xanthate was studied and the viscose rayon prepared was compared with viscose made with amine added in the dissolving process and with normal viscose. Part 2. The cyanoethylated fiber is the most suitable for finishing with melamine resin (lower crystallinity, shorter crystallite length, and higher moisture regain). (3583)

## Dyeing and printing D2

PECULIARITIES OF DYES WHEN APPLIED IN ADMIXTURE. J. A. Somers. Textile Recorder 78: 63-65, 58 (June 1961).
Possibilities and difficulties associated with the use of certain mixtures of dyes for dyeing acetate and hydrophobic fiber materials are discussed. 5 refs. (3584)

RECENT ONE BATH DYEING TECHNIQUE FOR WOOL/CELLULOSIC AND WOOL/POLYESTER UNION MATERIALS. M. Beaumont (Imp. Dyestuffs Ltd). Cobbler 13: 25-27 (1960-61). (3585)

REMARKS ON DYEING WITH VAT DYES BY THE PIGMENT PADDING PROCESS AND THE FACTORS DETERMINING THE LEVELNESS. R. Loss. SVF Fachorgan Textilveredlung 16, No. 1: 59-63 (1961). In German. Through BCIRA 41: 1913 (1961).
It is shown that the levelness in pigment padding is determined by the particle size of the pigment (in dispersion), wettability of the fabric, immersion time, quantity of padding liquor in the developing bath, and developing time. Directions are given for determining optimum conditions. (3586)

NOTES ON THE APPLICATION OF CIBACRON DYES TO CELLULOSE BY THE COLD PAD-BATCH TECHNIQUE. P. Ulrich (Ciba Ltd). Ciba Rev. No. 2: 46-47 (1961). (3587)

RECENT DEVELOPMENTS IN THE DYEING OF ACRYLIC FIBERS. B. Kramrisch (Ciba Clayton Ltd). J. Soc. Dyers Colourists 77: 237-244 (June 1961).
Recent developments and problems encountered in the application of disperse, cationic, and anionic dyes to various types of acrylic copolymer fibers are discussed. High temperature dyeing with a 1:2 metal-complex dyes is considered, with reference to the influence of application conditions. Dyeing of unions of acrylic fibers with both natural and manmade fibers by several one- and two-bath methods is described. Finally, some results are given on the dyeing of nitrile alloy fiber (Zefran), comparing the fastness of dyeings on this fiber with the fastness obtained on cotton and on wool. 7 refs. (3588)

STUDY IN UNION DYEING. AATCC Northern New England Section. Am. Dyestuff Reptr. 50: P481-P486 (June 26, 1961).
A review of the classes of dyes recommended for the fast dyeing of protein fiber and polyamides, and the new classes of modified acrylics, acrylic alloys, nytrils and polyvinyl alcohols, discloses that the 2:1 neutral-dyeing premetalized dyes have outstanding fastness properties combined with simplicity of application. This paper discusses the problems involved in union dyeing blends of any two of these fiber classes in the same dyebath with the 2:1 neutral-dyeing premetalized dyes, and specific combinations are investigated as important illustrations. 10 refs. (3589)

DYEING CIBACRONS ON CELLULOSIC TEXTILES. F. W. Bradley. Cobbler 13: 28-34 (1960-61).
The main processes for the application of Cibacron dyes (discontinuous pad-jig, semi-continuous pad roll, continuous pad steam, and continuous pad thermofix or dry heat baking) and for the removal of unfixed dye are described. (3590)

NEW METHOD OF PRODUCING CHEMICALLY DYED CELLULOSE FIBERS. S. Tun, M. A. Chekalin, and Z. A. Rogovin. Zhur. Priklad. Khim. 34, No. 2: 350-356 (1961). In Russian. Through BCIRA 41: 1654 (1961).
A method was developed for the production of chemically-dyed cellulosic fibers by diazotizing cellulose esters with aromatic amino acids and coupling them with various azo components. (3591)

PROCION-RESIN METHOD. J. Rattee and R. Bugmann. SVF Fachorgan Textilveredlung 16, No. 3: 162-177 (1961). In German. Through BCIRA 41: 1915 (1961).
The principles and practical aspects of the process and the properties of the dyeings and finishes obtained are discussed. (3592)

MECHANISM OF DYEING CELLULOSE FIBERS WITH REACTIVE DYES. H. G. Fröhlich. Z. ges. Textil-Ind. 63, No. 1: 47-51 (1961). In German. Through BCIRA 41: 1653 (1961).
The author reviews the different types of reactive dyes and their chemical constitution, describes their reaction with cellulosic fibers and their dyeing behavior, and gives in tabulated form directions for the stripping of reactive dyeings and detection of the individual dye classes. 24 refs. (3593)

FAST DYEINGS ON POLYESTER FIBER ALONE AND IN BLENDS. D. Marian. Z. ges. Textil-Ind. 63, No. 1: 43-47 (1961). In German. Through BCIRA 41: 1656 (1961).
The physical and chemical properties and applicability of Esterophile dyes (abstr. 2813/60) are discussed and directions are given for dyeing polyester, polyester/cellulose, and polyester/wool fabrics. Reference is also made to the French method of determining the sublimation fastness by the Thermotest. (3594)

AMACRON DYES FOR POLYESTER FABRICS. H. P. Bauman (Koppers Co.). Modern Textiles Mag. 42: 24, 26 (July 1961).
The properties and application of the Amacron dyes are summarized. Some typical beck formulas for various polyester fiber blends are included. (3595)

STUDIES ON THE DYEABILITY OF VINYLON. PART 3. UNUSUAL DYEING BEHAVIOR. A. Nasuno and K. Tanabe. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 263-272 (1961). In Japanese (English summary). Through BCIRA 41: 1657 (1961).
The behavior in dyeing with a direct dye (Congo Red) is dissimilar from that of rayon, though with a disperse dye (Diacelliton Fast Brilliant Blue BF) similar to that of cellulose acetate. It is suggested that the acetal groups are in the amorphous parts of Vinylon and are accessible to disperse dye, whereas the hydroxyl groups are in the crystalline and amorphous parts and their accessibility to direct dye varies with the dyeing conditions. (3596)

EFFECT OF TEMPERATURE AND pH ON THE ADSORPTION OF BASIC DYES BY WOOL. C. L. Bird and G. P. Stancey (Leeds Univ.). J. Soc. Dyers Colourists 77: 244-246 (June 1961).
Seven basic dyes were applied to wool yarn in 0-5% depth at 40, 60, and 80° C, as well as over a range of pH values at 60° C. As far as wool is concerned, basic dyes appear to be rapid-dyeing dyes of low affinity, the exhaustion of which is very sensitive to change in pH in the region pH 4-6. 10 refs. (3597)

ALBATEX HW: LEVELING AGENT FOR USE IN YARN DYEING WITH CIBALAN DYES. H. Abel (Ciba Ltd). Ciba Rev. No. 2: 36-37 (1961).
Albatex HW is a leveling agent with an affinity for wool fibers under acid conditions. Advantages in its use for dyeing wool yarns with Cibalan 1:2 metal complexes are cited. (3598)

SOME EFFECTS OF THE PITTING OF DYEING MACHINE METALS. Am. Cyanamid Co. Dyelines 6, No. 1: 1 (1961).
Rubbing against corroded or pitted stainless steel can cause scuff or abrasion marks in fabrics. These marks appear lighter, or weaker in shade, as though less dye had been absorbed. Methods for retarding excessive pitting are noted. (3599)

DEVELOPMENT OF THE DRIMARENE CLASS OF REACTIVE DYES. M. Capponi, E. Metzger, and A. Giamara (Sandoz Ltd). Am. Dyestuff Reptr. 50: 505-514 (July 10, 1961).
The basic concept underlying the development of the Drimarene dyes has been to produce a homogeneous range of nonsubstantive reactive dyes which meet the special requirements of textile printing and related padding processes. In these fields the Drimarene dyes are claimed to offer the maximum in color performance and fastness. (3600)

DYEING OF WOOL BY SOLVENT ASSISTED PROCESSES. W. Beal, K. Dickinson, and E. Bellhouse (Geigy Co. Ltd). Cobbler 13: 44-54 (1960-61).
See abstr. 3177/60. (3601)

USE OF ANTI-FOAMING AGENTS AS AN AID TO THE PRODUCTION OF LEVEL DYEINGS. Imp. Chem. Inds. Ltd, Manchester, England. 1961. 2 p. Technical Information, Dyehouse No. 599.
Recommendations on the use of Silcolapse 437, a silicone antifoaming agent, to prevent foaming and concomitant unlevel dyeing due to poor dye circulation. (3602)

DYEING OF TEXTILE PACKAGES. R. Weber. SVF Fachorgan Textilveredlung 16, No. 3: 178-193 (1961). In German. Through BCIRA 41: 1909 (1961).
The development of equipment and methods for the dyeing of cheeses, cakes, warp beams, card-sliver beams, cops, etc. is reviewed, and examples are given to illustrate the use and suitability of some assistants for obtaining optimum results. (3603)

DYEING JUTE PILE ASTRAKHANS. A. Ellis. Textile Weekly 61 (1): 1421-1422 (June 16, 1961). (3604)

DYEING OF TRICOT FABRIC WITH INDANTHRENE DYES ON THE WINCH VAT. C. Klopfstock. Z. ges. Textil-Ind. 63, No. 2: 130-132 (1961). In German. Through BCIRA 41: 1652 (1961).
Dyeing with Indanthrene dyes is reviewed in general, and special reference is made to the pigment-dyeing method by gradually increasing the temperature. The possibility of rapid oxidation with chlorine bleaching liquor of slowly oxidizing dyes is also pointed out. (3605)

VAT DYEING TODAY. PART 3. O. W. Clark. Textile World 111: 80-82 (June 1961).
Vat dyeing of cotton, viscose, and silk in skein form is covered. (3606)

VAT DYEING TODAY. PART 4. O. W. Clark (Am. Cyanamid Co.). Textile World 111: 70-72, 74 (July 1961).
The reasons for the popularity of package dyeing systems for vat dyeing are explained, and criteria for package and machine selection are given. (3607)

DYESTUFF TESTING. E. Brunnschweiler (Ciba Ltd). Ciba Rev. No. 2: 42-44 (1961).
Brief survey of the five major criteria governing the selection of new dyes for commercial development: shade; method of application and dyeing behavior; fastness and other properties; productivity; and manufacturing procedure and cost. (3608)

EVOLUTION OF DISPERSE DYES AND THEIR APPLICATION TO HYDROPHOBIC FIBERS. T. M. Baldwinson. J. Soc. Dyers Colourists 77: 246-251 (June 1961).
The development of disperse dyes for dyeing cellulose acetate is discussed. Methods of application are then considered, attention being given to direct, carrier, high-temperature, solvent-assisted, and pad dyeing techniques. 18 refs. (3609)

MIXING REACTIVE DYES. Textile World 111: 84, 86 (June 1961).
The use of the Horsfall unit for the continuous mixing of reactive dye batches is described. (3610)

DYEING BEHAVIOR OF CELLITON AND CELLITON FAST DYES DURING DYEING OF 2-1/2-ACETATE AND TRIACETATE. S. Hafenrichter. Textil-Praxis 16, No. 3: 273-282 (1961). In German. Through BCIRA 41: 1921 (1961).
Factors affecting the absorbability and absorption rate of Celliton dyes (temperature, dyeing time, dye concentration) are discussed, and tables are given listing the percentage dye quantity absorbed on 2-1/2-acetate and triacetate (according to the values obtained for the temperature/time and concentration curves) and the effect of various dye assistants on the color depth of Celliton dyeings on 2-1/2-acetate and triacetate. (3611)

DEVELOPMENT OF SHADE STANDARD AND TOLERANCES FOR USAF BLUE 85 SERVICE OVERCOAT. F. J. Rizzo, C. J. Megas, J. T. Walwood, and A. M. Crugnola (U.S. Quartermaster Research & Eng. Command). Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. Jan. 1960. 58 p. WADC tech. report 59-397.
Work on the development of a formulation of high color-fastness properties and application of the formulation to the preparation of a new shade standard and a practical range of color tolerances is reported. (3612)

SPECTROSCOPIC STUDIES OF THE MECHANISM OF DYEING TEXTILES. O. K. Dobozy, L. Lang, and G. Horvat (Polytech. Univ., Bucharest). Zhur. Priklad. Khim. 34, No. 1: 204-208 (1961). In Russian. Summary in Chem. Abstr. 55: 10898a (May 29, 1961). (3613)

PRINTING ACRYLIC FIBER UNIONS. H. Werdenberg (Ciba Ltd). Ciba Rev. No. 2: 37-41 (1961).
Recommended procedures and preparations for printing blends with cellulose and wool are covered. (3614)

NEW OBSERVATIONS IN PRINTING CELLULOSE WITH CIBACRON P COLORS. F. Talamona (Ciba Ltd). Ciba Rev. No. 2: 44-45 (1961).
Reactive Cibacron P dyes, especially developed for pad-dyeing and printing, show the following advantages: good washing-off properties and uniform diffusion under variable steaming conditions and reduced urea content. (3615)

PRINTING OF SYNTHETIC FIBERS. R. E. Fletcher (Ciba Clayton Ltd). Dyer 125: 765 (May 19, 1961).
Techniques for printing polyamide, polyester, and acrylic fibers are briefly reviewed. (3616)

RELIABLE COLORING AND REPRODUCTION OF FASHION SHADES WITH REACTIVE DYES IN PRINTS. A. Schaub. SVF Fachorgan Textilveredlung 16, No. 1: 56-58 (1961). In German. Through BCIRA 41: 1931 (1961).
The essential factors, which may adversely affect the reproducibility of shades, are discussed, with special reference to dissolution of the dyes, storage of the printing pastes, printing, drying, and steaming. The advantages of the Cibacron dyes are pointed out. (3617)

PHOTOGRAPHIC REPRODUCTION IN THE PREPARATION OF PRINTING BLOCKS FOR SCREEN PRINTING. A. Franken. Rayonne et Fibres Synthet. No. 2: 187-192 (1961). In French. Through BCIRA 41: 1660 (1961).
Problems associated with the use of photography in the reproduction of patterns are discussed, with reference to the modern equipment for the production of printing blocks. (3618)

COTTON PRINTING FAULTS. R. S. MacLean. Fibre and Fabric 114: 18-21 (June 1961). (3619)

TIPS ON DISCHARGE PRINTING. L. H. Ferguson (Wade Mfg. Co.). Textile World 111: 76, 78 (July 1961). (3620)

## Mechanical processes D3

CALENDER FOR KNITTED FABRICS. Grimsley & Co. Ltd. Textile Weekly 61 (2): 46, 49 (July 7, 1961).
Claimed to be the most versatile machine of its type, the calender will shrink to size, press, and finish rubberized, open width, and circular knitted fabrics. Features are noted. (3621)

BOW AND SKEW CORRECTION AUTOMATED. Allied Textile Printers. Textile Inds. 125: 96-99 (July 1961).
The mill use of two systems of weft straightening equipment (the optical Orthomat and the mechanical Bow-Skew Liner weft detectors) in combination with a Compak weft straightener is described and illustrated. (3622)

NAPPING WARP-KNITTED NYLON FABRICS FOR AN UNBROKEN LOOP FINISH. Brit. Nylon Spinners Ltd. Hosiery Times 34: 97, 99 (June 1961).
Three sequences, each producing a finish with a slightly different characteristic, are described: in the loom-state, after fabric preparation, and after dyeing. (3623)

WORK STUDY IN A WOOLEN MILL DRY FINISHING DEPARTMENT. Textile Mfr. 87: 229-230 (June 1961).
In this report details of the control and bonus scheme are recommended for a dry finishing department. The finishing processes carried out are tentering, brushing, cutting, pressing, and blowing. (3624)

## Drying, setting, conditioning D4

SIMPLE DESCRIPTION OF DRYING THEORY FOR TEXTILE TECHNICIANS. J. Stipek. SVF Fachorgan Textilveredlung 16, No. 1: 2-29 (1961). In German. Through BCIRA 41: 1945 (1961).
Publications dealing with the scientific principles of the drying technique and the processes taking place during drying of textile materials are reviewed. 12 refs. (3625)

DIMENSIONAL STABILITY OF WOOL FABRICS. M. Cednäs. J. Textile Inst. 52: T251-T271 (June 1961).
The object of the present investigation is to discover how the dimensions and the dimensional stability of wool fabrics change with setting treatments, and how the dimensional stability is related to other mechanical properties of set cloths. From the results, shrinkage is classified as irreversible, reversible, and press shrinkage. Yarn in set cloth is usually stabilized in a curved form. The curvature of set fibers changes reversibly in inverse proportion to their fiber diameters following changes in moisture content. When the equilibrium form of the yarn is changed, the forces of interaction between the warp and weft yarns are changed, and this affects such mechanical properties of the cloth as shear stiffness, extensibility, and crease-recovery. Changes brought about by setting cloth in water for various times at various temperatures and in presence of reducing agents are discussed. 36 refs. (3626)

DRYING: AN I/EC UNIT OPERATIONS REVIEW. P. Y. McCormick (E. I. du Pont de Nemours & Co.). Ind. Eng. Chem. 53: 583-585 (July 1961).
Review with 59 refs. (3627)

DIRECT HEATING OF DRYING AIR WITH GAS OR FUEL OIL. K.-G. Müller. Rayonne et Fibres Synthet. No. 1: 83-91 (1961). In French. Through BCIRA 41: 1675 (1961).
The construction of classical and modern air-heaters is described and their use in manmade fiber plants is discussed, with special reference to the use of gas or fuel oil, the heat of the combustion gases being directly transmitted (horizontal and vertical types of heaters). (3628)

CONVECTION DRYERS AND EXPERIMENTAL DETERMINATION OF THEIR OUTPUT. K. Prehn. SVF Fachorgan Textilveredlung 16, No. 1: 30-46 (1961). In German. Through BCIRA 41: 1946 (1961).
With reference to convection dryers, the author discusses the role of and means for increasing the heat exchange, the air-flow systems in the dryer, and other dryer elements. Other items considered include the characteristic constants of a dryer and their determination, measurements concerning the drying air, heat balance, recording the measured values and reporting the results, and tolerance limits of the constants. (3629)

TECHNICAL DESCRIPTION OF A NEW CONVEYOR DRYER. W. Münch. SVF Fachorgan Textilveredlung 16, No. 1: 46-50 (1961). In German. Through BCIRA 41: 1947 (1961).
The new dryer described (Benno Schilde Maschinenbau AG), in which the drying air is sucked through the material to be dried, requires very short drying time and reaches high specific water evaporation rates of up to 30 kg/m$^2$/hr. The dryer can be used for all woolen materials, hank yarns, and fabrics. (3630)

RHEOLOGY OF SETTING WOOL FABRICS. B. Olofsson (Swed. Inst. Textile Research). Svenska National-kommitten for Mekanik, Reologisektionen. Medd. 3: 23-41 (1960).
The magnitudes of dimensional changes during wetting and drying are discussed in terms of change of the set curvature of yarns using rheological models. See also abstr. 3632/61. (3631)

SETTING OF WOOL FABRICS: A THEORETICAL STUDY. B. Olofsson (Swed. Inst. Textile Research). J. Textile Inst. 52: T272-T290 (June 1961).
A theoretical framework is given for the experimental results obtained by Cednäs (see abstr. 3626/61) on the changes in dimensions of set and non-set wool woven fabrics during processing. The resistance to dimensional changes is related to the yarn curvatures. The magnitudes of the dimensional changes during wetting and drying are discussed in terms of change of the set curvature of the yarn, and it is shown that the setting results obtained may be explained in terms of an Eyring Flow Element model. 13 refs. (3632)

LOW-TEMPERATURE RADIANT HEAT DRYING. PART 2. NEW SYSTEM FOR PAPERMAKING. H. L. Smith, Jr. Fibres and Plastics 22: 175-177, 179 (June 1961).
Factors affecting heat transfer from the surface of the dryer to the sheet in several different methods are compared. 4 refs. (3633)

FAMATEX SINGLE LAYER TENTER. Famatex GmbH. Dyer 125: 837, 839 (June 2, 1961). (3634)

# TESTING AND MEASUREMENT E

## Fibers E1

IDENTIFICATION OF FIBER BLENDS BY INFRARED SPECTROSCOPY. M. K. Wharton and F. H. Forziati (Nat. Bur. Standards). Am. Dyestuff Reptr. 50: 515-518 (July 10, 1961).
A method for the qualitative analysis of fiber blends is described in which the blend is separated into its components in a density gradient column and the components are removed from the column and identified by infrared absorption spectroscopy. The fibers are readily identified as to chemical or generic class from their spectra but additional tests may be required for identification of the fibers within a class. 14 refs. (3635)

METHOD FOR THE QUANTITATIVE CHEMICAL ANALYSIS OF MIXTURES OF POLYESTER FIBERS WITH COTTON OR VISCOSE RAYON. J. Textile Inst. 52: P272-P275 (June 1961).
Tentative textile standard no. 67. (3636)

ANALYZING THE WRINKLING OF TEXTILE MATERIALS BY A NEW TECHNIQUE. C. O. Bostwick. Svenska Textilforskningsinst, Göteborg, Sweden. 1961. 28 p. Offentligt meddelande no. 23.
A new method was developed for the testing of the wrinkle recovery of fabrics using gages of various thicknesses to control the degree of strain placed on the bent specimens. The permanent recovery angles (after 20 hr of recovery) were plotted as a function of the cloth thickness divided by the bending diameter. The percent area under this curve gives the percent integrated angle recovery for the different degrees of wrinkling under the conditions of testing. Time of pressing as well as degree of pressing plays an important role in the amount of recovery obtained. Both vibration and moving the recovered sample to a high-humidity increased the wrinkle recovery. Dry-setting of textiles was found to be an important factor in wrinkle recovery. Poor recovery was experienced when materials (especially cellulosic) were pressed at high humidity and recovered at low humidity, both at the same temperature. Rapid drying while under press gave even harder wrinkling. Different weaves of the same textile material also could show greatly different recoveries, even though of the same thicknesses. The effectiveness of resin treatment was also investigated by this new technique. 21 refs. (3637)

SPECIFICATIONS OF TEST METHODS APPROVED BY THE TECHNICAL COMMITTEE OF THE INTERNATIONAL WOOL TEXTILE ORGANIZATION [IN VENICE, MAY 1960]. I.W.T.O. Tech. Comm. International Wool Secretariat, Dorland House, 18-20 Regent St., London, S.W. 1. Published as a special issue of Wool Science Review.
The following methods are covered: wool fiber diameter by air-flow apparatus; wool fiber length on single fiber machine; wool solubility in alkali; wool acid content; wool fiber length on comb sorter; diethyl ether soluble matter in combed wool sliver; pH value of wool water extract. (3638)

IDENTIFICATION OF ANIMAL FIBERS. A. B. Wildman (Wool Inds. Research Assoc.). J. Forensic Sci. Soc. 1: 1-8 (Mar. 1961).
The author outlines the principles of fiber identification and the techniques available, with an indication of their relative value. Suggestions on the use of simple classifications of certain structural features are included. (3639)

COTTON FIBERS: HOW SHORT IS SHORT? K. L. Hertel (Univ. Tenn.). Textile Inds. 125: 105-109 (June 1961).
The limitations of the % short fiber measurement are examined. (3640)

QUANTITATIVE DETERMINATION AND EXAMINATION OF IMPURITIES IN VEGETABLE FIBERS. PART 1. E. Frieser. Textil-Rundschau 15, No. 9: 472-483; No. 11: 591-595 (1960); 16, No. 2: 76-81 (1961). In German. Through BCIRA 41: 1696 (1961).
The present paper deals with the quantitative determination of waxy and fatty substances in cotton and flax; nitrogen and pectin in vegetable fibers; lignin, xylan, and acetic acid in bast fibers; sugar in cotton. (3641)

BULK COMPRESSIONAL CHARACTERISTICS OF A FIBER MASS. PART 1. TESTING APPARATUS AND SAMPLE PREPARATION. M. Takikawa and K. Kawamura. J. Soc. Textile Cellulose Inds. Japan 17, No. 3: 221-225 (1961). In Japanese (English summary). Through BCIRA 41: 1694 (1961).
Tests were made with an Instron tensile tester equipped with a compression stand and a support table; the effective area of each sample mass is kept constant during a test. (3642)

INFLUENCE OF ATMOSPHERIC TEMPERATURE AND PRESSURE ON FIBER DIAMETER MEASUREMENTS WITH THE AIR-FLOW APPARATUS. M. Greuel and C. Sustmann (Textilinginieurschule, Aachen). (Letter to the editor). J. Textile Inst. 52: T299-T300 (June 1961). (3643)

MICROSCOPE IN THE TEXTILE LABORATORY: NOTES ON THE TECHNIQUES EMPLOYED. S. M. Charlett. Textile Weekly 60 (2): 1191-1192, 1263-1264, 1319-1320, 1384, 1445, 1570 (1960); 61 (1): 36, 49 (1961).
Notes on stains, reagents, and techniques for fiber differentiation. (3644)

OBSERVATIONS ON THE IDENTIFICATION OF ACRILAN, ACRILAN 16, AND COURTELLE. J. T. Ball (Bradford Inst. Technol.). (Letter to the editor). J. Soc. Dyers Colourists 77: 251-252 (June 1961).
Staining and solvent tests for the differentiation of these fibers are summarized. (3645)

TEXTILE MICROSCOPY. PART 2. SINGLE FIBER MICROSCOPY: POSSIBILITIES AND LIMITATIONS OF ITS USE. H. Reumuth. Z. ges. Textil-Ind. 63, No. 1: 3-9; No. 2: 82-89 (1961). In German. Through BCIRA 41: 1693 (1961).
The practical application of microscopy in all branches of the textile industry is discussed with a view to providing useful information for microscopists, testers and research workers. Reference is made to relevant literature. The historical development of textile microscopy was reviewed in Part 1, abstr. 1085/60. (3646)

IDENTIFICATION AND QUANTITATIVE DETERMINATION OF NATURAL AND MANUFACTURED FIBERS. S. S. Praeger. Materials Research & Standards 1: 381-385 (May 1961).
This paper outlines some of the methods used in the analysis of textile fibers. Stress is laid on the use of selective solvents, since this approach has been found to be extremely successful in the course of many years of practical experience in the author's laboratory. 10 refs. (3647)

FIBER IDENTIFICATION. F. W. Lindley and C. Beaumont (Courtaulds Ltd). Dyer 125: 871, 880 (June 16, 1961).
Some of the techniques which form the basis of the more important practical methods for fiber identification are described in this lecture-demonstration. (3648)

SANDOCRYL DYE STAINING AS A LIGHT MICROSCOPICAL TECHNIQUE FOR ACRYLIC FIBERS. K. Kato (Toyo Rayon Co. Ltd). (Letter to the editor). Textile Research J. 31: 578-580 (June 1961).
The use of the Sandocryl dyeing process (a recently developed refinement of the cuprous-ion method for the dyeing of polyacrylonitrile fibers) as a microscopical stain specific for acrylic fibers is described and illustrated. (3649)

## Yarns E2

EVALUATION OF USTER SPECTROGRAMS. H. Langer. Deut. Textiltech. 11, No. 2: 63-66 (1961). In German. Through BCIRA 41: 1702 (1961).
Interpretation and evaluation of Uster spectrograms and standardization of the spectrograms with respect to the effective and limiting irregularity are discussed, and ideal and normal spectrograms and the origin of so-called harmonics are explained. (3650)

STANDARD VALUES FOR TENSILE TESTING OF COTTON YARNS. Zellweger AG. Melliand Textilberichte, Heidelberg, Germany. 1961. 43 p. Available from Melliand-Verlag fur Textilindustrie, Rohrbacherstrasse 76, Heidelberg, Germany. DM 8.40 [$2.15 approx.].
Fundamental and reliable standard values for the breaking load and elongation at break have been established on the Uster Dynamometer by means of tensile tests carried out on cotton yarns by yarn manufacturers in Switzerland, Great Britain, and Germany. The booklet is printed in English, German, and French, and contains practical examples for carrying out measurements, evaluating the results, and estimating cotton yarn quality with the aid of the standard value diagrams. (3651)

SAMPLE LENGTH SELECTION IN MEASURING SLIVER WEIGHT, ROVING SIZE, ETC. D. S. Hamby (N.C. State Coll.). Textile Bull. 87: 48-49 (July 1961).
The variance length curve is used to explain the influence and importance of sample length for detecting product variation. 3 refs. (3652)

## Fabrics E3

CREASE-RECOVERY TEST FOR FABRICS. S. L. Anderson and G. E. Settle (Wool Inds. Research Assoc.). (Letter to the editor). J. Textile Inst. 52: T298-T299 (June 1961).
The WIRA method described is a modification of B.S. 3086:1959 and overcomes the drawbacks of the latter by the use of a shorter specimen to reduce gravitational effect and a 10X projector for measuring the crease recovery angle. (3653)

PROCEDURES FOR ANALYZING RASCHEL FABRICS. PART 4. H. Rotenstein. Knitted Outerwear Times 30: 50-54 (June 26, 1961).
Procedures for estimating machine gages, number of needle bars and guide bars, and the use of special attachments are described. (3654)

MEASUREMENT OF THE COEFFICIENT OF FRICTION BETWEEN SAMPLES OF THE SAME CLOTH. G. H. Thorndike and L. Varley (Wool Inds. Research Assoc.). J. Textile Inst. 52: P255-P271 (June 1961).
This paper describes work carried out in an attempt to find whether frictional properties enter into an assessment of handle and, if so, to what degree. An instrument for recording the coefficient of static friction between samples of cloth by reciprocating one sample and recording the resultant motion of the other when restrained by springs was developed. Some test results are given for cloths of different structure and those made from yarns spun on normal and high-draft worsted systems, and for the effects of regain and pH on cloth friction. 6 refs. (3655)

TEXTILES: AGING-SENSITIVE TEXTILES. ARTIFICIAL HEAT AGING AT 70° C. Swiss Standards Assoc. Textil-Rundschau 16, No. 2: 84 (1961). In German. Through BCIRA 41: 1707 (1961).
The Swiss specification SNV 98 890 describes the testing arrangement for accelerated heat aging of textiles, the changes occurring during aging (appearance, color, handle, strength, etc.) being examined, after conditioning the samples for at least 24 hr (20° C and 65% rh), and compared with the original state of the material. (3656)

EVALUATION OF MICROMETER AND MICROSCOPICAL METHODS FOR MEASURING THICKNESS OF FLOOR COVERINGS. E. Horowitz, J. Mandel, R. J. Capott, and T. H. Boone. Materials Res. & Stand. 1, No. 2: 99-102 (1961). Through BCIRA 41: 1703 (1961).
Interlaboratory tests have shown that, in the hands of experienced personnel, the dial micrometer method and the measuring microscope method give results in close agreement when used to determine the thickness of felt-backed floor coverings. (3657)

EVALUATION OF WARP KNITTED FABRICS. Fine Spinners Eng. Works. Textile Weekly 61 (1): 1524 (June 30, 1961).
The machine described is designed for the examination and measurement of warp knit fabrics taken from the knitting machine in roll form. (3658)

ANALYSIS OF WEBBING IMPACT DATA AND DETERMINATION OF OPTIMUM INSTRUMENTATION TO BE USED IN CONJUNCTION WITH THE IMPACTING OF WEBBING. R. B. Williams and R. J. Benjamin (Cook Research Labs.). Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. Mar. 1960. 64 p. WADC tech. report 59-694.
The investigation was undertaken to evaluate and analyze the methods used to obtain data on impact tests on nylon webbing for aircraft and missile use. Recommendations for improved or modified methods and instruments are included. (3659)

## Other E4

RELATIONSHIP BETWEEN THE IODINE, THIOCYANATE AND MACKEY NUMBERS OF MINERAL OILS, EMULSIFIERS, AND THEIR MIXTURES. M. Kehren. Z. ges. Textil-Ind. 63, No. 1: 40-43 (1961). In German. Through BCIRA 41: 1712 (1961).
It has been found that determination of the iodine and thiocyanate numbers in mineral oils and oil-soluble emulsifiers does not give a reliable criterion of the spontaneous combustion tendency of lubricants. (3660)

COLOR AND ITS MEASUREMENT. W. D. Wright (Imp. Coll. Sci. & Technol.). Ciba Rev. No. 2: 2-34 (1961).
Color and its measurement, p. 2-24; Instrumental methods of color measurement, p. 25-28; Color theory and measurement applied to the textile and dyeing industries, p. 29-32. 43 refs. (3661)

COLOR MEASUREMENT: ITS POSSIBILITIES FOR THE COLORIST. H. W. Ellis. Dyer 125: 804 (June 2, 1961).
Following an introductory explanation of the principles of color measurement, the use of color measurement in the dyehouse is discussed. (3662)

PRINCIPLES OF "ON THE MACHINE" MOISTURE MEASURING SYSTEMS: TAPPI PROJECT 775. R. B. Hurm. Tappi 44: 125A-134A (June 1961).
The measuring principles of the following systems are described: Hurletron, Atrometer, Stamm, Brown Moist-O-Graph, Hygrotester or Lippke Supertest, Aquatel, Foxboro, Microwave, and Masoneilan. Sketches and diagrams are utilized to clarify where necessary. Limitations of usage, specifically as defined by moisture ranges, are a part of the report. (3663)

TESTING METHODS FOR TEXTILE ASSISTANTS AND THEIR IMPORTANCE FOR THE TECHNICAL QUALITY CONTROL. R. Wirth. Deut. Textiltech. 11, No. 2: 89-91 (1961). In German. Through BCIRA 41: 1711 (1961).
Testing method for determining the anti-precipitating action of various textile assistants for vat acids, vat dyes, and azo pigments, the fastness-improving effect of cationic agents, and the effectiveness of optical bleaching agents are described. Since in each case only one special property is determined, the values obtained can be used only for comparing the individual assistants but not for general practical quality control. (3664)

TEXTILES: DETERMINATION OF THE CHLORINE WASHFASTNESS OF DYEINGS AND PRINTS. Swiss Standards Assoc. Textil-Rundschau 16, No. 2: 82-83 (1961). In German. Through BCIRA 41: 1709 (1961).
The Swiss specification SNV 95 828 defines the chlorine washfastness as the resistance of textiles (mainly from natural cellulose) to the action of aqueous detergent solution containing chlorine bleaches, such as those used in households and industrial laundries at increased temperatures. The method of testing the dyed or printed material, apparatus and reagents, sample preparation, and test report are specified. (3665)

## MILL MANAGEMENT F

PROVIDING NEEDED CAPITAL FOR KNITTED OUTERWEAR MILLS. M. D. Sandler. Knitted Outerwear Times 30: 63, 65 (July 17, 1961).
The operation and benefits of factoring in providing capital are explained. (3666)

MODERN TEXTILE MANAGEMENT. PART 4. EVOLUTIONARY OPERATION: NEW CONCEPT IN PROCESS DEVELOPMENT. N. L. Enrick (Univ. Va.). Textile Inds. 125: 88-90 (June 1961).
The use of the evolutionary operation or Evop technique (originated by G. E. P. Box for Imp. Chem. Inds. Ltd) for determining optimum processing conditions is explained and illustrated. (3667)

MODERN TEXTILE MANAGEMENT. PART 5. N. L. Enrick (Univ. Va.). Textile Inds. 125: 73-76 (July 1961).
Simple procedures and worksheets in using Evolutionary Operation (Evop) techniques to select the best processing conditions when a multitude of variables are involved are described and illustrated. A testimonial as to cost savings and general improvements in plant operation, resulting from the introduction of Evop in a chemical fibers plant, by F. S. Riordan, Jr. (Chemstrand Corp.) is included. (3668)

DO YOU HAVE WHAT IT TAKES TO BE A SUPERVISOR? PART 3. W. Westbrook. Textile Bull. 87: 58-59 (July 1961).
The problems inherent in the selection of a supervisor are illustrated by means of a case history. (3669)

## Industrial engineering F1

TEXTILE INDUSTRY MUST AUTOMATE OR LIQUIDATE. W. F. Robertson. Textile Bull. 87: 37-38, 76-77 (July 1961).
The reasons for the present need for automation in the textile industry are outlined. (3670)

THE BOGY OF AUTOMATION. Textile Inds. 125: 27-31, 90 (June 1961).
The importance of automation in cutting costs in order to compete with foreign mills is stressed. (3671)

MILL COSTS AND THE NEW MINIMUM WAGE. Textile World 111: 50-56 (June 1961).
In order to offset rising wages, 30 areas where cost reduction might be effected in spinning, weaving, dyeing, and finishing are pointed out. (3672)

COSTING IN THE TEXTILE FINISHING INDUSTRY. J. H. E. Allison. Cobbler 13: 39-42 (1960-61).
The general mechanics and uses of a cost accounting system in commission finishing are described and illustrated. (3673)

PRACTICAL COSTING IN TEXTILES. E. Stones. Textile Weekly 61 (1): 130, 133-134 (Jan. 20, 1961).
For part 1, see abstr. 1159/61. (3674)

TEACHING SKILLS IN INDUSTRY. W. C. Crow (John Baynes Ltd). Textile Weekly 61 (1): 544, 546 (Mar. 10, 1961).
For part 1, see abstr. 1613/61. (3675)

BIBLIOGRAPHY OF ARTICLES PERTAINING TO ENGINEERING ECONOMICS. TAPPI Eng. Economics Comm. Tappi 44: 124A (June 1961).
The topics included are divided into 4 classifications: (1) engineering economics (15 refs); (2) specific cost subjects (8 refs); (3) articles generally related to (1) and (2) (12 refs); and (4) book reviews or digests (5 refs). (3676)

FINANCIAL STATEMENTS MADE SIMPLE. F. H. Drewes. Textile Inds. 125: 82-84 (June 1961).
It is the purpose of this article to point out ways and means of preparing and presenting financial statements, especially the profit and loss statements, in a simplified manner, and to offer comparisons in an understandable manner. (3677)

KNITTING MILL PRODUCTION CONTROL. Villa Rica Hosiery Mills. Textile World 111: 57-59 (June 1961). (3678)

SAFETY SCHEME IN THE JUTE INDUSTRY. Textile Recorder 78: 69 (June 1961).
The frequency of industrial accidents in the Dundee jute industry has been reduced by the scheme described. It involves the recording of all accidents to show both the frequency of accidents occurring to workers employed by the various firms and the relative standing of the firms in order of accident frequency. (3679)

SELECTION, PLACEMENT, AND PROMOTION PRACTICES IN TEXTILE MILLS IN AHMEDABAD. Indian Textile J. 71: 288, 299, 300, 309 (Mar. 1961). (3680)

SOUTHERN TEXTILE METHODS AND STANDARDS ASSOCIATION, PROCEEDINGS, SPRING MEETING, 1961, CLEMSON, S.C. 64 p. Available from Howard L. Loveless, Executive Secretary, P. O. Box 10144, Knoxville 19, Tenn.
Application of job evaluation, by H. G. Worley (Western Elec. Co.), p. 1-27; SMS: work simplification program with leadership skills, by W. M. Dill (Dill-Clitherow & Co.), p. 28-31; Textile methods and standards, by D. Debnam (J. P. Stevens & Co.), p. 32-43; Practical application of statistics to measurement data, by J. W. Morton (Pacific Mills-Burlington Inds.), p. 44-52; Computer applications in the textile industry, by R. K. Morris (IBM Corp.), p. 53-56; Industrial engineering for the textile industry, by R. G. Carson, Jr. (N.C. State Coll.), p. 57-64. (3681)

PROGRESS IN OPERATIONS RESEARCH. VOL. 1. R. L. Ackoff, ed. John Wiley & Sons, N.Y. 1961. 505 p. $11.50.
Contents: The meaning, scope, and methods of operations research; Decision and value theory; Survey of inventory theory from the operations research viewpoint; Mathematical programming; Dynamic programming; Dynamics of operational systems: Markov and queuing processes; Sequencing theory; Replacement theory; Theory and application of simulation in operations research; Military gaming; Progress in operations research: the challenge of the future. Indexes. (3682)

ASQC CONVENTION TRANSACTIONS 1961. Am. Soc. for Quality Control, 161 W. Wisconsin Ave., Milwaukee 3, Wis. 1961. 574 p. $5.00.
The following textile papers are included among 70 papers: Variations flow analysis for process improvement, by N. L. Enrick, p. 113-126; Practical analysis of a successful SQC installation in high quality, high style garment manufacturing, by S. P. Spalding, p. 127-135; Moisture control in the cashmere industry, by S. Breen, p. 137-143. (3683)

QUALITY CONTROL PROCEDURES OF TWO GEORGIA COTTON MILLS. Textile Inds. 125: 73-77 (June 1961).
How we maintain sales yarn quality, by G. Blumquist (Swift Spinning Mills); How we maintain weaving yarn quality, by J. Wheeler (Canton Cotton Mills). (3684)

WORK STUDY IN A WORSTED MILL. R. A. Gunning (Salts (Saltaire) Ltd). Time Motion Study 10: 23-27 (June 1961).
The subject is discussed under the following headings: human problems; building and machinery problems; and technical work study problems. (3685)

REVIEW OF THE LITERATURE OF 1960 ON WASTE-WATER AND WATER POLLUTION CONTROL. H. Heukelekian and others. J. Water Pollution Control Fed. 33: 445-476 (May 1961); 549-584 (June 1961); 681-710 (July 1961).
Part 1. Analytical methods (51 refs) and sewage (129 refs). Part 2. Industrial wastes (202 refs). (Textile and wool scouring wastes, p. 569.) Radioactive wastes (103 refs). Part 3. Water pollution (201 refs). (3686)

TRAIN 2 FOR EVERY JOB. C. West. Textile Inds. 125: 54-55 (July 1961).
The advantages of encouraging employees to understudy the jobs around them are cited. (3687)

## Plant and equipment F2

AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL SYSTEMS FOR MAINTAINING GOOD QUALITY. R. T. Waite, Jr. Textile Bull. 87: 49-51 (July 1961).
The advantages and limitations of each of the 4 major types of heating and air conditioning controls (self-actuated, electric, pneumatic, electronic) are discussed, and the practical and intangible benefits of automatic control systems are outlined. (3688)

MODERN PRACTICE IN AIR CONDITIONING. W. W. Alcroft. Textile Recorder 78: 69-70 (July 1961). (3689)

PROCEEDINGS OF THE 1961 CONFERENCE ON ELECTRICAL APPLICATIONS FOR THE TEXTILE INDUSTRY, MAY 4-5, 1961. Am. Inst. Electrical Engrs., Atlanta, Ga.
Syncro regulators for speed and draw control, by R. T. Campbell; Guardistor motors, by W. S. Hines; Thermotector motor protective system, by L. S. Sherman; Ground faults: detection and location, by J. R. Torrence; Report of the AIEE textile committee's standards panel, by S. Cowan; An introduction into computing systems, by J. L. Richardson, Jr.; Application of digital computers to plant operations and control, by J. H. Reynolds; Characteristics of reluctance synchronous motors, by B. R. Becker; Characteristics of permanent magnet type synchronous motors, by R. R. Prechter; Hysteresis motor: principles and application, by C. G. Helmick and J. R. Chapman; Application of non-excited synchronous motors, by L. P. Gregory; Preliminary report on investigation of allowable surface temperatures of electrical equipment for use in textile mills, by AIEE Textile Industry Comm. (3690)

ELECTRONIC DEVICES IN TEXTILE PRODUCTION. G. Schellenberger. Z. ges. Textil-Ind. 62, No. 22: 977-980; No. 23: 1017-1023 (1960). In German. Through BCIRA 41: 1713 (1961).
The conditions for the correct use of electronic methods are discussed, and the possibilities and limitations of devices and installations used in the textile industry are reviewed. (3691)

SPINNING MODERNIZATION PROJECT. R. L. Hodara. Textile Weekly 61 (1): 1179-1183, 1215-1216 (May 19, 1961); 1239-1240, 1268 (May 26, 1961); 1295-1296, 1319-1320 (June 2, 1961).
An actual case study on the design of a small size spinning mill is presented. Analyses of the following are included: production plan; machinery to be installed; layout; proposed productivity and cost basis; building; auxiliary services; and accessory buildings and services. (3692)

USE A MULTIPURPOSE GREASE. B. Van Ormer and G. Burns (Sun Oil Co.). Textile Inds. 125: 135-136, 140 (June 1961).
The term "multipurpose" generally means a high temperature, water-resistant grease suited to a large variety of lubricating grease applications. The characteristics, advantages, and applications of such greases are discussed. (3693)

KEEP LIFT TRUCK UPKEEP COSTS DOWN. J. M. Squier (Clark Equip. Co.). Textile Inds. 125: 111-114 (June 1961).
The advantages of keeping accurate records on the maintenance and servicing of handling equipment are cited. (3694)

HEATING AND VENTILATION IN THE TEXTILE INDUSTRY. N. E. Charlesworth. Textile Recorder 78: 66-68 (July 1961).
Space heating requirements in the processing of raw material and in the finishing section of the textile industry are discussed. (3695)

NEW LOOK AT LIGHTING. E. P. Lee. Textile Recorder 78: 63-65 (July 1961).
Factors of general importance to the efficiency of factory lighting are discussed. A tabulation of lamp qualities available is included. (3696)

HOW MUCH WILL IT COST TO SET UP A JERSEY PLANT? Man-Made Textiles 38: 54-55 (June 1961).
The cost of setting up a plant of 6 machines balanced to produce a fairly extensive range of jersey fabrics and at the same time able to cope with an extra high output of simple double piqué as the demand fluctuates is described. The 6 machines proposed are: 3 Wildt Mellor Bromley Type 6LM6, 2 Wildt Mellor Bromley Type 5RGS2, and 1 Wildt Mellor Bromley Type 4RD, all of 30 in. diameter and 18 needles per in. A sketch of a plant layout is included. (3697)

SRRL REPORTS. R. A. Rusca (So. Reg. Research Lab.). Textile Inds. 125: 77-80, 82 (July 1961).
This paper briefly reviews machinery and apparatus developments for the period of July 1, 1950 to June 30, 1960. 45 refs. (3698)

TEXTILE MACHINERY AND ACCESSORIES. Wool Record Supplement, June 2, 1961. 48 p.
This special issue on textile machinery and accessories also includes the following technical articles: Trends and developments in carding, by P. P. Townend, p. 5-9; Electronic devices in the wool textile industry, by H. Lemon, p. 31-33; Power transition from steam to electricity, by W. Womersley, p. 35-37; New look at old problems in dyeing and finishing, by B. Campbell, p. 39-41; Reconditioning: meeting a great variety of requirements, by M. Matthews, p. 43. (3699)

## SCIENCES G

## Chemistry G1

DETERMINATION OF ALDEHYDE GROUPS IN CELLULOSE BY OXIDATION WITH POTASSIUM PERMANGANATE. K. U. Usmanov and R. V. Perlina. Uzbekh. Khim. Zhur. No. 3: 20-28 (1960). In Russian. Summary in Chem. Abstr. 55, No. 7: 6857d (1961). (3700)

DETERMINATION OF CARBOXYL GROUPS IN CELLULOSE. O. Samuelson and B. Törnell. Svensk Papperstidn. 64, No. 5: 155-159 (1961). Through BCIRA 41: 1720 (1961).
The new method proposed can be used for determining the total amount of carboxyl groups in cellulose samples containing carbonyl groups. The carboxyl groups of the cellulose must be in the sodium form at the time of sampling. The method involves determination of the amount of acid required to transform the cellulose groups from the sodium form to the free acid form; this is effected by elution with a known amount of hydrochloric acid. (3701)

COMPLETE KINETIC SYNTHESIS OF CELLULOSE IN COTTON FIBER AND THE INFLUENCE ON IT OF SEVERAL FACTORS. K. U. Usmanov and V. P. Shatkina. Khim. Khlopchatnika, Akad. Nauk Urbek. S. S. R., Inst. Khim Rastitel. Veshchestv: 5-13 (1959). In Russian. Summary in Chem. Abstr. 55: 9885g (May 15, 1961). (3702)

THE DEPENDENCE OF CHANGES IN THE DEGREE OF POLYMERIZATION OF GROWING COTTON CELLULOSE ON EXPOSURE TO SUNLIGHT. K. U. Usmanov and S. I. Slepakova. Khim. Khlopchatnika, Akad. Nauk, Uzbek. S. S. R., Inst. Khim. Rastitel. Veshchestv 19-35 (1959). In Russian. Summary in Chem. Abstr. 55: 10895g (May 29, 1961).
The degree of polymerization (DP) of cellulose in growing fibers, and the effect thereon of solar irradiation in field conditions, were studied for 2 grades of cotton. The results suggest that the decrease in the DP and strength of growing cotton fibers exposed to sunlight in air is due to oxidation by atmospheric oxygen. (3703)

MODES OF DEFORMATION OF COTTON FIBERS. M. S. Nigmankhodzhaeva and K. U. Usmanov. Khim. Khlopchatnika, Akad. Nauk, Uzbek. S. S. R., Inst. Khim Rastitel. Veshchestv: 25-39 (1959). In Russian. Summary in Chem. Abstr. 55: 10895i (May 29, 1961).
Differences in behavior between wet and dry cellulose (cotton and viscose) fibers under applied tensile stresses and in stress relaxation were examined, and are discussed on the basis of the theory of elastic, viscoelastic, and plastic deformations. It is concluded that the effect of moisture on cellulose, and in particular on the cotton fiber, is analogous to that of heat on polymers or plasticizers on plastics. (3704)

PRELIMINARY NOTE ON THE EFFECT OF ADDITIVES ON THE REACTION BETWEEN CELLULOSE AND FORMALDEHYDE. W. J. Roff (Shirley Inst.). (Letter to the editor). J. Textile Inst. 52: T301 (June 1961). (3705)

SORPTION OF COPPER BY CELLULOSE. R. I. C. Michie. Reply: R. D. Preston. (Letters to the editor). Nature 190: 803-804 (May 27, 1961).
The evidence makes it appear most probable that sorption of copper from solution by cellulose is due entirely to the action of acidic groups in, or associated with, the cellulose molecules, and measurements of sorption of copper cannot be expected to yield any information necessarily related to the physical structure of the cellulose. (3706)

CHEMISTRY AND MANUFACTURE OF SOAP. J. P. Wallis. Research 14: 188-192 (May 1961).
This article describes in general terms the theory and practice of soap making. (3707)

ACTION OF THE BRAIDY COPPER-NUMBER REAGENT ON HYDROCELLULOSES. R. L. Colbran and G. F. Davidson (Shirley Inst.). J. Textile Inst. 52: T291-T297 (June 1961).
The present paper reports some experimental observations that bear upon the question of what happens at the reducing end of a hydrocellulose molecule when the copper number of the hydrocellulose is determined by the Braidy method. The reactions involved lead to the production of carboxyl groups, and about 22 atoms of copper are reduced per carboxyl group formed. The theoretical implications of these observations are discussed. 12 refs. (3708)

TENSILE BEHAVIOR OF SOME CELLULOSE RAYONS SWOLLEN IN SODIUM HYDROXIDE SOLUTIONS. B. Farrow (Shirley Inst.). J. Textile Inst. 52: T221-T240 (May 1961).
The tensile properties of a variety of rayons when swollen and the connection between molecular orientation and the length changes that occur on swelling without any applied tension were examined. It is shown that breaking load and the slope of the load-extension curve display relations with concentration and temperature that are in conformity with Neale's theory of swelling of cellulose, and it is suggested that extensometric measurements can provide a useful measure of swelling. Differences in shape of the load-extension curves of the rayons and in their response to swelling are discussed in reference to their fine structure. 13 refs. (3709)

ELECTRONOGRAPHIC METHOD OF DETERMINING CELLULOSE STRUCTURE. A. L. Zaides and I. G. Stoyanova. Vysokomol. Soed. 3, No. 2: 321 (1961). In Russian. Through BCIRA 41: 1732 (1961).
The good agreement between electronogram and x-ray diagram data, found also for cellulose hydrate films, confirms the authors' previously expressed view that an amorphous electronogram does not always prove the amorphous state of high molecular substances. (3710)

THICKNESS AND COMPOSITION OF THIN DETERGENT FILMS. J. M. Corkill, J. F. Goodman, D. R. Haisman, and S. P. Harrold (Thos. Hedley & Co. Ltd). Trans. Faraday Soc. 57: 821-828 (May 1961).
This paper describes an experimental study in which the composition of thin films was investigated by radiotracer and optical methods. 17 refs. (3711)

EFFECT OF ANION SIZE ON ITS SORPTION BY POLYAMIDE FIBERS. V. A. Myagkov and A. B. Pakshver. Trudy Ivanovsk. Khim.-Tekhnol. Inst. No. 8: 75-82 (1958). In Russian. Summary in Chem. Abstr. 55: 8867h (May 1, 1961). (3712)

THERMODYNAMIC RELATIONS FOR HIGH ELASTIC MATERIALS. P. J. Flory (Mellon Inst.). Trans. Faraday Soc. 57: 829-838 (May 1961).
A general formulation, based on a thermodynamic approach, for the relationship between stress, strain, and temperature for high elastic materials is developed. 15 refs. (3713)

CROSS-LINK BREAKDOWN AND REFORMATION IN STRAINED POLYMER NETWORKS. J. Scanlan (Rubber & Plastics Research Assoc. Gt. Brit.). Trans. Faraday Soc. 57: 839-845 (May 1961).
A theoretical treatment is given of the effect on the elastic properties of a polymer network of cross-link rupture and reformation when the network is strained for complete reformation of the cross-links to a form thereafter stable. 10 refs. (3714)

ASTM STANDARDS ON SOAPS AND OTHER DETERGENTS. 9th ed. Am. Soc. for Testing Materials, Comm. D-12, 1916 Race Street, Philadelphia 3, Pa. Dec. 1960. 268 p. $4.25.
This compilation has been prepared to bring together all of the ASTM standards and tentatives pertaining to soaps and other detergents in convenient form for use in industry. Included in this compilation are fourteen specifications for soaps and soap products, nine specifications for various alkaline detergents, and twenty-two methods of analysis covering soaps and other detergents. Definitions of terms and general testing methods applying to these materials are also included. (3715)

FORCES IN DETERGENCY. PART 1. J. C. Harris (Monsanto Chem. Co.). Soap Chem. Specialties 37: 68-71, 125, 127 (May 1961).
The attractive and repulsive forces involved in the total interaction in a detergent system, consisting of a soiled substant and the surfactant (or detergent) solution, are analyzed. (3716)

FORCES IN DETERGENCY. PART 2. J. C. Harris (Monsanto Chem. Co.). Soap Chem. Specialties 37: 50-52 (June 1961).
The significance of heat of wetting data in determining the potential hydrophilicity or hydrophobicity of substrates is explained. (3717)

INFLUENCE OF ATMOSPHERIC OXIDATION ON SUPERCONTRACTION OF WOOL FIBERS REDUCED WITH THIOGLYCOLLIC ACID. O. A. Swanepoel (So. African Wool Textile Research Inst.). (Letter to the editor). Nature 190: 626-627 (May 13, 1961). (3718)

MODERN ASPECTS OF POLYMERS. J. J. P. Staudinger (Distillers Plastics Group). Chem. & Ind. No. 23: 771-776 (June 10, 1961).
The author reviews some significant advances which have either already had practical repercussions in the plastics industry, or which seem to possess a considerable growth potential for the future. (3719)

QUANTITATIVE INVESTIGATION OF THE X-RAY DIFFRACTION PICTURE OF SOME TYPICAL RAYON SPECIMENS. PART 1. P. H. Hermans and A. Weidinger (Inst. Cellulose Research AKU). Textile Research J. 31: 558-571 (June 1961).
The x-ray diffraction pictures of some typical specimens of highly orientated rayon are studied quantitatively using a diffractometer technique with Geiger counter detection and strictly monochromatized radiation. The results allow of a more reliable separation between crystalline interferences and background than heretofore possible. Evaluation of the intensities of the principal paratropic and diatropic interferences reveals about the same relative differences in crystallinity between the rayons investigated as those given by the method of crystallinity determination employed earlier. Absolute values of the crystalline fraction could not, however, be derived from the present work. In the series of specimens investigated there is a correlation between crystallinity and line width. It seems that higher crystallinity tends to go parallel with larger or more perfectly ordered crystallites, a correlation which is also reported to have been observed in other polymers. It is shown that orientation derived from the azimuthal spread of either the diatropic or the paratropic interferences leads to equal results. This is in support of the method developed earlier for quantitative determination of orientation from the paratropic lines in simple exposures on flat film. 23 refs. (3720)

QUANTITATIVE EVALUATION OF THE X-RAY DIFFRACTION OF RAMIE FIBER. P. H. Hermans and A. Weidinger (Inst. Cellulose Research AKU). Textile Research J. 31: 571-572 (June 1961).
A quantitative evaluation of the principal paratropic and diatropic interferences of ramie fiber is undertaken using a diffractometer technique with Geiger counter detection and strictly monochromatized radiation. The relative intensities of the main crystalline interferences have been measured and found to be in reasonable agreement with those calculated for the Andress lattice structure. Absolute values of the crystalline fraction however could not be derived from the present results. 3 refs. (3721)

POLYMERIC MATERIALS. C. C. Winding and G. D. Hiatt. McGraw-Hill Book Co., N.Y. 1961. 406 p. $12.00.
Contents: Polymer structure and polymerization reactions; Solutions and molecular weights of polymers; General properties of plastics; General applications of polymeric materials; Natural products and their derivatives; Polymers formed by condensation reactions; Ethenic polymers; Silicones; Rubbers; Index. (3722)

## Physics G2

ACTION OF GAMMA RAYS ON THE STRUCTURE OF CELLULOSIC FIBERS. K. U. Usmanov, E. I. Kalbanovskaya, and R. B. Damovskii. Vysokomol. Soed. 3, No. 2: 223-227 (1961). In Russian. Summary in BCIRA 41: 1697 (1961). (3723)

DEGRADATION OF COTTON IN AN OXYGEN ATMOSPHERE BY GAMMA-RADIATION. F. A. Blouin and J. C. Arthur. J. Chem. Eng. Data 5: 470-475 (1960). (3724)

## Biology G3

INDUSTRIAL SIGNIFICANCE OF THE MICROBIAL BREAKDOWN OF CELLULOSE. J. A. Gascoigne (Brit. Rayon Research Assoc.). Chem. & Ind. No. 21: 693-696 (May 27, 1961).
The enzymes involved in cellulose decomposition and their mode of action, sources of contamination, and the prevention and beneficial effects of microbial degradation are covered. 10 refs. (3725)

## MISCELLANY H

CHALLENGE OF MODERN FIBER TECHNOLOGY: AN EXPLORATION OF GUIDELINES TO TEXTILE MARKETING. FULL TEXT OF THE FIRST ANNUAL CONFERENCE OF AATT. Modern Textiles Mag., special issue, June 1961. 78 p.
This special issue of Modern Textiles Magazine is devoted to the First Annual Conference of the American Association for Textile Technology on the Challenge of Modern Fiber Technology. (3726)

REVIEWING THE 45TH KNITTING ARTS EXHIBITION. Knitter 25: 37-41, 61-66 (June 1961). (3727)

CHEMISTRY IN SCOTLAND, AND ITS PIONEER CONTRIBUTIONS TO TEXTILE TECHNOLOGY. A. Clow. J. Textile Inst. 52: P204-P218 (May 1961).
Mather lecture, 1961. (3728)

TRENDS AT 45TH KNITTING ARTS EXHIBITION. W. E. Shinn. Knitter 25: 35-37 (June 1961). (3729)

KNITTING ARTS EXHIBITION. PART 1. Textile World 111: 67-68, 131-152 (June 1961). (3730)

AMERICAN SOCIETY OF KNITTING TECHNOLOGISTS. TECHNICAL SEMINAR, ATLANTIC CITY, APRIL 26, 1961. Hosiery Trade J. 68: 99-118 (June 1961).
The following papers were presented: Aspects of seamless hosiery knitting, by R. Peel, p. 99-100; Thermal underwear story, by G. A. Urlaub, p. 100-105; Patterning potentials in sinker top machines, by V. J. Lombardi, p. 106-107; Engineering knit fabrics for lamination, by R. G. Eddy, p. 110-111; Application of Orlon Sayelle in knitwear, by K. C. Bass, Jr., p. 114-115; Finishing of knit goods destined for polyurethane foam laminating, by H. B. Goldstein, p. 116-118. (3731)

EAST GERMAN LEIPZIG FAIR: KNITTING MACHINE DEVELOPMENTS. Knitted Outerwear Times 30: 7-9, 33 (May 29, 1961).
Features of the following are described: VEB 5602/8 circular machine; NUWUB 5403 V-bed and 5405/I power flat machine; 5606/2 interlock machine. (3732)

TEXTILE FINISHING MACHINERY AT HANOVER. Dyer 125: 829-832 (June 2, 1961); 968, 971 (June 30, 1961). (3733)

NEEDED: A SCIENTIFIC BASIS FOR BULKED YARNS. J. W. S. Hearle. Skinner's Silk & Rayon Record 35: 631-632 (July 1961).
Review of the Textile Institute Conference papers on the production and properties of bulk yarns. (3734)

U. S. D. A. COTTON UTILIZATION CONFERENCE, NEW ORLEANS, LA., MAY 1-3, 1961. Textile Bull. 87: 37-40 (June 1961); 69-72 (July 1961).
The papers summarized were divided into two major categories: fiber properties and mechanical processing; chemical modification and finishing. (3735)

IMPRESSIONS OF THE 1960 HARROGATE WOOL CONFERENCE. F. G. Lennox. Textile J. Australia 36: 242-244 (Feb. 20, 1961).
Comments on the scope of the papers presented at the Second Quinquennial Wool Textile Research Conference at Harrogate, May 18-28, 1960. (3736)

ANNUAL REPORT ON THE TECHNOLOGICAL RESEARCH SCHEME FOR 1958-59. Indian Central Jute Comm. Calcutta, 1960. 45 p. (3737)

RESEARCH NEEDS OF THE TEXTILE INDUSTRY. D. F. Allen (United Merchants & Mfrs. Inc.). Am. Dyestuff Reptr. 50: P523-P524 (July 10, 1961).
The benefits inherent in an active research and development program are cited. (3738)

CAREER OPPORTUNITIES IN TEXTILES. Am. Textile Reptr. 75: 8-12, 24-35, 53-56, 58-67, 71 (June 15, 1961).
This special issue on textile education includes the following articles: Career opportunities in textiles, p. 8-10, 53-56, 71; Machinery business offers new challenge to 1961 graduates, p. 11-12, 58; Textile schools and colleges, p. 24-35, 59-67. (3739)

# PATENT CHECKLIST

U.S. patents may be obtained from the U.S. Patent Office, Washington 25, D.C., for 25¢ a copy. Photostatic copies of foreign patents are also available. Charges for these photostats are based on the number of pages in the patent.

## FIBERS A

### Natural fibers A1

APPARATUS FOR THE REMOVAL OF FOREIGN MATTER FROM ASBESTOS FIBERS. Johns-Manville Corp. BP 869 312, May 31, 1961. (3740)

PERMANENT METALLIC LAGGING FOR THE BLADES OF COTTON GIN VACUUM FEEDERS AND SEPARATORS. L. D. France and W. C. Williams. USP 2 984 872, May 23, 1961. (3741)

PROCESS OF TREATING WOOL ON GROWING SHEEP. R. J. Fitzgerald (Australia). USP 2 985 136, May 23, 1961.
Wool free from excess wool waxes, dirt, and odors when shorn is obtained by immersing the sheep in a bath of soap, sodium or potassium silicate and water, allowing the coating to dry, and removing with water prior to shearing. (3742)

### Manmade fibers A2

PREVENTING DISCOLORATION IN POLYVINYL ALCOHOL FIBERS. Farbwerke Hoechst AG. BP 854 987, Nov. 23, 1960. Through BCIRA 41: 1590 (1961).
The solution of polyvinyl alcohol is mixed with a linear polymer of a polybasic acid (e.g. polyacrylic acid or the copolymer of vinyl methyl ether and maleic anhydride) to the extent of 2-6% on the weight of the polyvinyl alcohol. The spun filaments are heat-resistant and fast to boiling water. (3743)

POLYVINYL ALCOHOL FIBERS HAVING IMPROVED DYEABILITY. Y. Hirano, M. Matsumoto, T. Osugi, and K. Tanabe (to Kurashiki Rayon KK). BP 855 552, Dec. 7, 1960. Through BCIRA 41: 1819 (1961).
Polyvinyl alcohol solution is mixed with a vinylpyridine polymerized by the emulsion technique. The solution is spun and 5-50% of the free OH groups are acetalized by treating the filaments with formaldehyde. (3744)

REGENERATED PROTEIN FIBERS. Courtaulds Ltd and F. W. Berk & Co. Ltd. BP 869 092, May 31, 1961.
Fibers resistant to hot aqueous liquors are insolubilized by incorporating sodium zirconyl silicate in the spinning solution or by subjecting the fibers to the action of sodium zirconyl silicate. (3745)

THICK-AND-THIN VISCOSE FILAMENTS WITH LATENT CRIMP. R. H. Braunlich and T. S. Matter (to Am. Viscose Corp.). USP 2 984 889, May 23, 1961.
The filament has alternating large and small denier sections, with a skin thicker along the large denier sections than along the small denier sections, and a latent crimp which is greater in the small denier sections than in the large denier sections. (3746)

ALL-SKIN VISCOSE RAYON. M. R. Lytton (to Am. Viscose Corp.). USP 2 984 541, May 16, 1961.
The addition to the spinning solution of water-soluble, water-dispersible alkylene oxide adducts of ethylene diamine which contain at least 28 alkylene oxide units per molecule is claimed. (3747)

UNIAXIALLY ORIENTED POLYVINYL CHLORIDE FIBERS OF IMPROVED TENSILE STRENGTH AND SHRINK RESISTANCE. R. A. Isaksen and E. H. Merz (to Monsanto Chem. Co.). USP 2 984 593, May 16, 1961. (3748)

## YARN PRODUCTION B

PROCESSES FOR STAPLING FIBERS OF POLYESTERS. Farbwerke Hoechst AG. BP 854 900, Nov. 23, 1960. Through BCIRA 41: 1589 (1961).
Continuous polyester filaments are locally treated with guanidine carbonate and a glycol derivative (e.g. thiodiglycol) and then exposed to such conditions that breaks occur. For example, 50 den/24 fil yarn is printed in stripes at 60 mm intervals with a paste, dried and woven into a fabric, and this is baked at 180-210° C. (3749)

CRIMPING NYLON YARNS. L. Pownall (to Brit. Nylon Spinners Ltd). BP 857 721, Jan. 4, 1961. Through BCIRA 41: 1868 (1961).
The yarn is run through boiling water or dye liquor to a crimping device of the false-twist, stuffer-box, or edge variety. (3750)

DRAWING PROCESS FOR CONVERSION OF TOW TO STAPLE FIBER. J. L. Lohrke. BP 857 829, Jan. 4, 1961. Through BCIRA 41: 1802 (1961).
Solidified filaments (e.g. polyacrylonitrile tow) are run through a stretching zone in which each length element undergoes at least one cycle of stretching between a predetermined maximum and a predetermined minimum. The drawing treatment may precede conversion of a tow of continuous filaments into staple fiber. (3751)

APPARATUS FOR AUTOMATICALLY FEEDING LOOSE FIBER TO WEIGHING MACHINES. E. Barlow (to T.M.M. (Research) Ltd). BP 857 841, Jan. 4, 1961. Summary in BCIRA 41: 1845 (1961). (3752)

FEED MECHANISM FOR STUFFING BOX CRIMPERS. Joseph Bancroft & Sons Co. BP 869 327, May 31, 1961.
The feed mechanism is provided with means for reciprocating the yarn or tow axially along the feed rolls to distribute it uniformly across the full width of the crimping chamber. (3753)

AGENT FOR CLEANING NATURAL AND SYNTHETIC FIBERS IN A DRY STATE. A. Boer (to Bancroft-Brillotex Intern. SA). USP 2 982 676, May 2, 1961.
The fibers are mixed with an agent consisting essentially of milled cereal grains. (3754)

APPARATUS FOR CUTTING FIBER. K. Takehara (Japan). BP 857 920, Jan. 4, 1961. Through BCIRA 41: 1806 (1961).
The apparatus includes a cutting roller with a porcelain surface and a coacting shaft on which blades are mounted. The fiber is fed to the roller under idler rollers that apply pressure. The blade shaft rotates in the opposite direction to the cutting roller and at such a speed that the blades travel faster. (3755)

CRIMPING APPARATUS. T. Nesbitt-Dufort (to E. Scragg & Sons Ltd). BP 857 967, Jan. 4, 1961. Through BCIRA 41: 1864 (1961).
Yarn from a bulk supply is run through an electrically heated setting zone, then a fixing zone in which it meets a current of air, and finally a false twist apparatus. The current of air is created by fan blades mounted on the false-twist device. (3756)

STUFFER BOX CRIMPING APPARATUS. F. Scragg (to E. Scragg & Sons Ltd). BP 857 974, Jan. 4, 1961. Through BCIRA 41: 1865 (1961).
The yarn as it is discharged from the stuffer tube enters an endless circular channel cut in the face of a rotatable drum-like chamber, three sides of the channel being provided by the material of the drum and the fourth side by a cover. Heat is applied either to the stuffer tube or the drum at the point where the yarn enters the channel. The yarn cools in a later part of the channel and is withdrawn at another point. (3757)

CRIMPING CELLULOSE TRIACETATE FIBERS. J. R. Wylde and J. G. N. Drewitt (to Brit. Celanese Ltd). BP 858 534, Jan. 11, 1961. Through BCIRA 41: 1812 (1961).
Cellulose triacetate yarns with a high degree of crimp permanence are obtained by wetting the material (continuous filament tow, staple fiber slivers) with diethylene glycol diacetate before feeding it into the hot stuffer box. (3758)

DIRECT PRODUCTION OF YARNS FROM TOW. J. E. Costa, E. W. Le Boeuf, and L. E. Lefevre (to Dow Chem. Co.). USP 2 980 982, Apr. 25, 1961.
A continuous web suitable for twisting directly into a yarn is formed by shredding a unilaterally oriented film of a normally crystalline polymer, e.g. vinylidene chloride, into a web in which the fibers are in random, coherent association. (3759)

STAPLE FIBER CUTTER. L. V. Jorgensen (to Chemstrand Corp.). USP 2 982 163, May 2, 1961.
Apparatus for cutting staple fibers of varying length from single filament bundles. (3760)

METHOD FOR PRODUCING CRIMPED GLASS FIBERS. F. C. Skalko (to Owens-Corning Fiberglas Corp.). USP 2 983 026, May 9, 1961.
Glass fiber in the form of linear bundles of filaments, yarns, rovings, or strands are subjected to differential temperatures to produce spaced crimps of varying magnitude. (3761)

## Opening, picking, fiber preparation B1

FIBER SEPARATING DRUMS FOR AUTOMATIC FEEDERS. I. Fellmann (Belgium). USP 2 985 922, May 30, 1961.
Drum in which the working members consist of a series of points, needles, or toothed blades mounted on longitudinal supports. (3762)

CASING CLOSURES FOR OPENING MACHINERY. Tweedales & Smalley Ltd. BP 869 308, May 31, 1961.
The casing of the machine is provided with a single hinged door and one or more sliding doors, the closure of the hinged door serving to lock the sliding doors in their closed position. (3763)

APPARATUS FOR DECORTICATING FLAX AND RETURNING SHIVE TO SOIL. E. C. Schneider, Jr. (to Peter J. Schweitzer, Inc.). USP 2 983 965, May 16, 1961. (3764)

## Carding and combing B2

RECTILINEAR COMBING MACHINE. J. J. Rieter & Cie AG. BP 856 369, Dec. 14, 1960. Through BCIRA 41: 1849 (1961).
The usual heavy, nipper frame is replaced by a 3-point support in which a cheek element is fixed by a synthetic resin adhesive to each end of the nipper plate, the top nipper is pivoted to the cheek elements and these have cavities into which the trunnions for the feed roller are pressed by means of plate springs. (3765)

LAP SUPPLY MEANS FOR THE NIPPER MECHANISMS OF RECTILINEAR COMBING MACHINES. J. J. Rieter & Cie AG. BP 856 515, Dec. 21, 1960. Through BCIRA 41: 1850 (1961).
In order to run a rectilinear comber at high speed without undue noise, the variation (caused by the nipper movement) of the length of a path between a nip point of a feed roller with a nipper plate and a spatially fixed lap nip is compensated for by deflecting the lap about a guide roller that oscillates in synchronism with the combing cycle about a fixed support. (3766)

FALSE TWISTING MACHINES. F. Scragg and A. Dobson (to E. Scragg & Sons Ltd). BP 857 872, Jan. 4, 1961. Through BCIRA 41: 1862 (1961).
Means for imparting a high degree of false twist to a yarn by causing the yarn to roll about its own axis in contact with one or two surfaces of revolution, stationary, or rotating and of a high coefficient of friction. One such surface is provided by an endless, resilient, circular belt traveling around two pulleys. Another is a bush, flared at both ends. (3767)

CARDING MACHINE LICKERIN AND FEED ROLL COVER. R. S. Brown and A. L. Miller (to U.S. Secy. Agri.). USP 2 983 966, May 16, 1961.
The conventional lickerin cover and scavenger roll are replaced with a contoured cover which fits over the lickerin and extends over the feed roll and down to the fiber lap being fed to the machine. This results in a reduced air pressure over the lickerin and a concomitant reduction in fiber loss. (3768)

SLIVER COILER. P. B. West and G. C. Anderson (to Saco-Lowell Shops). USP 2 983 967, May 16, 1961.
Mechanism for tilting the tube of a coiler mechanism away from the delivery rolls to facilitate sliver removal when the tube becomes clogged. (3769)

NONOSCILLATING STRIPPER FOR REMOVING SLIVER FROM CARD DOFFER. C. W. Worley (to James Lees & Sons Co.). USP 2 985 921, May 30, 1961. (3770)

## Drawing and roving B3

DRAFTING APPARATUS. G. F. Raper (to T. M. M. (Research) Ltd). BP 854 836, Nov. 23, 1960. Through BCIRA 41: 1607 (1961).
A device for constricting the sliver or roving to less than its normal cross-section comprises a trough-like bottom component and a set of three separately cam-adjustable and slidable upper components that press down on the sliver or roving. (3771)

LOCKING MECHANISM FOR TOP DRAFTING ROLL CARRIER AND WEIGHTING ARMS. SKF Kugellagerfabriken GmbH. BP 855 531, Dec. 7, 1960. Through BCIRA 41: 1852 (1961).
In drafting apparatus provided with a carrier arm that can move up or down about a pivot on a bracket, a pair of coupled levers is fitted to the bracket for locking the arm in its extreme positions. (3772)

APPARATUS FOR THE DELIVERY OF ROVINGS TO RECTANGULAR RECEIVING CONTAINERS. Vereinigte Glanzstoff Fabriken AG. BP 855 924, Dec. 7, 1960. Summary in BCIRA 41: 1848 (1961). (3773)

APPARATUS FOR THE CONTINUOUS AND AUTOMATIC DETECTION AND CORRECTION OF IRREGULARITIES IN SLIVER THICKNESS. Deutscher Spinnereimaschinenbau Ingolstadt and Schubert & Salzer Maschinenfabrik AG. BP 855 949, Dec. 14, 1960. Through BCIRA 41: 1855 (1961).
Variations in sliver thickness are detected by a pivoted roller or wheel riding on the sliver as it passes over a fixed roller, and the movements of the wheel or roller are transmitted by a system of linked rods to the driving device so as to increase the rate of feed if a thick piece is detected or decrease it if the sliver is thin. (3774)

DRAFTING ARRANGEMENT. O. König. BP 857 606, Jan. 4, 1961. Through BCIRA 41: 1851 (1961).
The top roll is fitted with a flexible jacket and has within it a roller that exerts pressure on the inside of the jacket at a point offset from the axis of the jacket. Guides within the jacket locate the pressure roller in relation to the lower drawing roller so that the nip of the rollers is at a distance from the plane containing the axes of the two drafting rollers. (3775)

CLAMPING BRACKETS FOR SUPPORTING TOP ROLL CARRIER ARMS. SKF Kugellagerfabriken GmbH. BP 857 842, Jan. 4, 1961. Through BCIRA 41: 1853 (1961).
A clamping bracket for supporting a pivoted top-roller carrier and weighting arm is formed with lateral plates in which slits are cut to provide some resiliency when the parts are bolted together. (3776)

SLIVER UNIFORMITY CONTROL APPARATUS. H. G. Neil (to Special Instruments Lab.). USP 2 981 986, May 2, 1961.
Apparatus for automatically adjusting the draft ratio of a drawing frame in response to variations to the mass of sliver being drafted. (3777)

## Spinning, winding, twisting B4

DEVICE FOR LOCKING AND DRIVING BOBBINS ON SPINDLES. Chimiotex SA. BP 857 629, Jan. 4, 1961. Summary in BCIRA 41: 1804 (1961). (3778)

SPINNING AND DOUBLING SPINDLES. Wm. Kenyon & Sons Ltd. BP 854 247, Nov. 16, 1960. Through BCIRA 41: 1610 (1961).
Idler mechanism for stopping a spindle, in order to piece up a broken end, without disturbing the drive by the same belt to the other spindles or developing heat as the belt slips over the whorl of the stopped spindle. (3779)

APPARATUS FOR AUTOMATICALLY DOFFING AND REPLACING BOBBINS ON RING SPINNING MACHINES. Kanegafuchi Boseki KK. BP 854 316, Nov. 16, 1960. Through BCIRA 41: 1614 (1961).
The invention relates to an apparatus that runs on rails alongside a spinning frame and automatically doffs full bobbins and replaces them by empty ones. A vertically swingable pair of grips, pivoted to the upper ends of a pivoted Y-piece lifts the head of the full bobbin and conveys it to a box over which it is automatically released. Empty bobbins are put in a hopper from which an endless conveyor delivers them one at a time into a guide chamber where they are stacked in an inclined position from which they are successively impaled by the empty spindles. Details are shown on three sheets of drawings. (3780)

FALSE TWISTING DEVICE. A. Dobson (to E. Scragg & Sons Ltd). BP 854 780 and 854 781, Nov. 23, 1960. Through BCIRA 41: 1609 (1961).
(1) The device comprises (a) two pairs of rollers arranged to form similar cusps between which the yarn runs and (b) a third roller, between the pairs, to deflect the yarn from a straight path. (2) The relative diameters of the rollers are such that the yarn remains in contact with them all as it runs past the twisting device. (3781)

BROKEN END DETECTOR FOR TWISTING FRAMES. L. V. M. Rochegude and P. Ladreyt. BP 854 806, Nov. 23, 1960. Through BCIRA 41: 1613 (1961).
The reciprocating bar that carries the thread guides for the various winding units of the machine also carries the adjustable supporting arms of the feelers that detect broken ends. The intact yarn maintains the rocker arm of a feeler against the reciprocating bar itself. (3782)

DEVICE FOR STOPPING THREAD DELIVERY UPON THREAD BREAKAGE IN DOUBLERS. VEB Spinnerei und Zwirnerei Maschinenbau. BP 854 852, Nov. 23, 1960. Through BCIRA 41: 1612 (1961).
The invention relates to a stop motion that does not leave the broken end hanging within the reach of an adjacent spindle. The thread-advancing roller cooperates with a roller that has an annular groove near one end about which a guide causes the thread to form a loop. A forked displacement lever causes a broken end to be trapped by the loop and carried with it into the groove. (3783)

DONNING AND DOFFING DEVICE FOR RING SPINNING, TWISTING, AND DOUBLING MACHINES. F. W. A. Scriven. BP 854 968, Nov. 23, 1960. Through BCIRA 41: 1615 (1961).
Means for ensuring that, in automatic doffing, the yarn breaks at a controlled position without undue waste. (3784)

DEVICE FOR THE LUBRICATION OF THE ROTARY PARTS OF SPINNING AND TWISTING SPINDLES. P. Serra (Italy). BP 857 091, Dec. 29, 1960. Summary in BCIRA 41: 1857 (1961).
See abstr. 4634/60. (3785)

REVERSIBLE INDIVIDUAL DRIVE FOR SPINNING SPINDLES. F. Graf (to J. J. Rieter & Cie AG). USP 2 984 062, May 16, 1961. (3786)

## Yarns B5

PREPARATION OF PLASTIC FOR WEAVING. E. Krombert (Austria). BP 855 960, Dec. 14, 1960. Through BCIRA 41: 1894 (1961).
Strips of polyvinyl chloride are folded lengthwise and seamed by stitching, welding or gluing into a unit structure for use in weaving. (3787)

CRIMPED COMPOSITE FILAMENTS. E. I. du Pont de Nemours & Co. BP 869 301, May 31, 1961.
The filaments are composed of at least 2 different synthetic polymers arranged in either a side-by-side or sheath-core relationship, one of the components containing ionizable groups which give it a longitudinal swellability greater than that of the other. (3788)

APPARATUS FOR HEAT-STRETCHING SYNTHETIC FIBER TIRE CORDS. C. A. Litzler. BP 869 349 and 869 350, May 31, 1961. (3789)

COMPRESSION RESISTANT CRIMPED VISCOSE STAPLE FIBERS. Am. Viscose Corp. BP 869 387, May 31, 1961. (3790)

AIR JET APPARATUS FOR BULKING YARN. C. J. Gonsalves (to E. I. du Pont de Nemours & Co.). USP 2 982 000, May 2, 1961. (3791)

AIR JET APPARATUS FOR PRODUCTION OF VOLUMINOUS YARN. W. Pool (to Brit. Celanese Ltd). USP 2 982 082, May 2, 1961. (3792)

SUPPORTING TUBE FOR YARN CONDITIONING. R. Sibille (to Papeteries Rene Sibille). USP 2 982 493, May 2, 1961.
The supporting tube consists of a rigid internal tube and at least one deformable tube fitted coaxially around the rigid tube to provide for uniform shrinkage of the yarn and ease of unwinding after shrinkage. (3793)

BOBBIN FOR DACRON FILAMENTS. R. Atwood and C. C. L'Allemand. USP 2 983 466, May 9, 1961.
A beaded tubular metal barrel with a plastic cover extending beyond its ends is claimed. (3794)

THREAD PROTECTOR FOR SEWING THREAD SPOOLS. H. G. Retherford. USP 2 983 467, May 9, 1961. (3795)

IMPROVED ADHESION OF TIRE CORD TO RUBBER. C. C. Tung (to Monsanto Chem. Co.). USP 2 983 642, May 9, 1961.
Cotton, rayon, and nylon cords are impregnated with a water dispersion of a dinitrosoamine, particularly N, 4-dinitroso-N-substituted aniline. (3796)

ARRANGEMENT FOR FACILITATING THE REMOVAL OF YARN COILS FROM THEIR FORMING SPOOLS. M. B. Gazet (to Etab. G. Decombe). USP 2 985 401, May 23, 1961. (3797)

COLLAPSIBLE JACK SPOOL. D. E. Foote (to Nat. Vulcanized Fibre Co.). USP 2 986 357, May 30, 1961.
Spool from which the flanges can be removed from the barrels to facilitate shipment. (3798)

CORD OR ROPE HANKING DEVICE. E. Handzel (to Ru-Son Prods. Co. and J. Rubenstein & Sons). USP 2 983 984, May 16, 1961. (3799)

## FABRIC PRODUCTION C

BOBBIN CARRIERS FOR BRAIDING MACHINES. B. Carter (to B. & F. Carter & Co. Ltd). USP 2 986 061, May 30, 1961.
The carrier includes a detachable unit for the back stem which can be removed for altering the tension spring in accordance with the type of material being used. (3800)

## Warping, slashing, yarn preparation C1

PNEUMATIC THREAD-TENSIONING DEVICE. Rüti Machy. Works Ltd. BP 854 848, Nov. 23, 1960. Through BCIRA 41: 1633 (1961).
The thread is caused to run between a flat, thin diaphragm and a fixed component that communicates with a source of vacuum. (3801)

WINDING OF TEXTILE YARNS. J. R. Grady (to Muschamp Textile Machy. Ltd). BP 855 057, Nov. 30, 1960. Through BCIRA 41: 1632 (1961).
A spool or cheese winder and an automatic pirn winder are arranged to be served by the same creel and the same drive. The creel is built between and above the back-to-back winders. (3802)

CONSTANT TENSION WINDING MACHINES. Vereinigte Glanzstoff Fabriken AG. BP 855 959, Dec. 14, 1960. Through BCIRA 41: 1888 (1961).
Yarn is withdrawn from the supply bobbin by a member driven at a variable speed, and the winding bobbin is rotated by a slipping clutch driven at a constant speed. (3803)

APPARATUS FOR WINDING UNDER UNIFORM TENSION. P. Aumann. BP 858 063, Jan. 4, 1961. Through BCIRA 41: 1891 (1961).
The drive is provided by an eddy-current coupling acting as a torque converter and driving the reel through an adjustable gear. (3804)

APPARATUS FOR REGULATING THE CONTACT PRESSURE OF WARP SIZING SQUEEZE ROLLS IN DEPENDENCE ON VARIATIONS IN THE RATE OF FEED. Gebrüder Sucker GmbH. BP 858 668, Jan. 11, 1961. Summary in BCIRA 41: 1896 (1961). (3805)

SLASHING APPARATUS FOR PRODUCER'S TWIST YARN. W. R. O'Shields (to Chemstrand Corp.). USP 2 982 001, May 2, 1961. (3806)

BUILDER MECHANISM FOR BOBBIN WINDING MACHINE. R. B. Newton (to Whitin Mach. Works). USP 2 982 487, May 2, 1961. (3807)

WINDING MACHINE FOR THE PRODUCTION OF BOBBINS WITH PREDETERMINED TENSION. W. Zander (to Vereinigte Glanzstoff Fabriken AG). USP 2 985 393, May 23, 1961.
Means for adjusting the rate of drawing off of the yarn from a supply source in accordance with the speed of the yarn over the winding bobbin run. (3808)

## Weaving C2

LOOM STOP MOTION. J. Picanol-Camps (France). BP 855 311, Nov. 30, 1960. Through BCIRA 41: 1635 (1961).
Apparatus for automatically disengaging the drive of a fast-reed loom when the shuttle fails to be boxed correctly. (3809)

HEDDLE FRAMES. Sulzer Frères SA. BP 856 653, Dec. 21, 1960. Summary in BCIRA 41: 1897 (1961).
The removable intermediate stays are so connected with the upper and lower beams as to improve the frame rigidity. (3810)

LOOM PICKERS. T. Brindle. BP 857 764, Jan. 4, 1961. Through BCIRA 41: 1899 (1961).
The bush in the spindle hole is held in place by a plastic or metal circlip that engages a groove in the bore of the picker. (3811)

LOOM TAKEUP ROLLS. J. Thwaites. BP 858 331, Jan. 11, 1961. Through BCIRA 41: 1901 (1961).
The rolls are made by covering a metal spindle with rubber or other resilient material and scoring the cover (not quite through) with parallel straight or helical cuts. (3812)

AUTOMATIC BOBBIN CHANGING APPARATUS. Ruti Machy. Works Ltd. BP 869 374, May 31, 1961.
Fresh bobbins are carried in a revolving magazine incorporating pneumatic yarn holding means. (3813)

LOOM HARNESS. F. H. Kaufmann (to Steel Heddle Mfg. Co.). USP 2 982 313, May 2, 1961.
The actuating connectors are supported at the ends of the harness frame in a manner which permits raising or lowering of the frame without entanglement. (3814)

ADJUSTABLE HOOK FOR CONNECTING HARNESS FRAME TO DOBBY CORDS. B. Hayden. USP 2 982 314, May 2, 1961. (3815)

PNEUMATIC WEFT PICKING DEVICE. R. Wille and J. Klein (Germany). USP 2 982 315, May 2, 1961. (3816)

SHUTTLE CHANGING MECHANISM FOR RIBBON LOOMS. G. M. V. J. Choupin (France). USP 2 982 316, May 2, 1961.
See abstr. 4678/60. (3817)

HEATING ATTACHMENT FOR DRYING WET-WOVEN FABRICS ON THE LOOM ITSELF. K. Metzler (Germany). USP 2 983 288, May 9, 1961. (3818)

ELECTRICALLY ACTUATED WEFT STOP MOTION FOR NARROW FABRIC LOOM. R. A. Dupre. USP 2 984 265, May 16, 1961. (3819)

HAND LOOMS. H. M. Paternayan. USP 2 985 198, May 23, 1961. (3820)

AUTOMATIC BOBBIN CHANGING DEVICE FOR MULTISHUTTLE LOOMS. R. Senn (to G. Fischer AG). USP 2 985 199, May 23, 1961. (3821)

JACQUARD MECHANISM FOR WILTON LOOM. R. B. Patterson (to James Lees & Sons Co.). USP 2 986 170, May 30, 1961.
Semi-oriental jacquard capable of weaving a float pile fabric without the use of stationary knives. (3822)

## Knitting C3

NEEDLE CAM ACTUATING MEANS FOR CIRCULAR KNITTING MACHINE. C. H. Wainwright (to Bentley Eng. Co. Ltd). USP 2 983 126, May 9, 1961. (3823)

TEMPERATURE CONTROL DEVICE FOR SINKER BAR ASSEMBLY IN A STRAIGHT BAR KNITTING MACHINE. A. J. Cobert (to Soc. Belge D'Optique et D'Instruments de Precision SA). USP 2 983 127, May 9, 1961. (3824)

FULL-FASHIONED KNITTED FOUNDATION GARMENT. C. D. Goff and W. S. Detwiler. USP 2 983 128, May 9, 1961.
The girdle is formed of three suture joined sections, the center section knit of elastic yarn and the side sections of a pair of stretch yarns. (3825)

STRAIGHT BAR KNITTING MACHINES. E. Start (to William Cotton Ltd). USP 2 984 092, May 16, 1961.
Means for automatically resuming knitting after fabric pressoff without the aid of run-on fabric. (3826)

OIL DRIP CUP FOR KNITTING MACHINES. C. M. Russo. USP 2 984 317, May 16, 1961. (3827)

WARP KNITTING MACHINE DRIVE. K. Liebrandt and W. Schrader (Germany). USP 2 984 998, May 23, 1961.
The drive consists of a combination of two quadruple linkages which are interconnected to permit the use of a single drive shaft. (3828)

METHOD OF KNITTING PILE FABRICS WITH EXTRA LONG LOOPS. F. E. Paul (to Wildman Jacquard Co.). USP 2 984 999, May 23, 1961. (3829)

PATTERN CHAIN MECHANISM FOR KNITTING MACHINES. H. O. Werner (to Wildman Jacquard Co.). USP 2 985 000, May 23, 1961. (3830)

KNITTED FURLIKE, ELASTIC CUFFS. R. L. Lamontagne and R. C. Greene (to Wildman Jacquard Co.). USP 2 985 001, May 23, 1961. (3831)

## Fabrics C4

HEADING TAPE FOR CURTAINS WITH PLEATING CORDS. M. Stephenson (to T. French & Sons Ltd). BP 854 125, Nov. 16, 1960. (Addition to BP 794 263). Through BCIRA 41: 1638 (1961).
During the weaving of the heading tape an elastic pleating cord is run through the pockets under tension so that when relaxed the tape falls into pleats. (3832)

CURTAIN HEADING TAPE. R. French (to T. French & Sons Ltd). BP 857 855, Jan. 4, 1961. Summary in BCIRA 41: 1904 (1961). (3833)

WEAVING HIGHLY ELASTIC WOOL FABRICS. Simons & Frowein AG. BP 855 914 and 855 915, Dec. 7, 1960. Through BCIRA 41: 1903 (1961).
A worsted outerwear fabric is woven with a few rubber threads in the warp, spaced evenly and woven under tension. The rubber threads are fed to the heddles as a second warp. (3834)

MACHINE FOR PRODUCING FIGURED TUFTED CARPETS. K. Scheibel (to Institut für Textilmaschinen). BP 856 463, Dec. 14, 1960. Through BCIRA 41: 1898 (1961).
Needles for inserting pile loops into a ground are controlled by jacquard mechanism. (3835)

POROUS NONWOVEN WEBS FORMED OF BONDED ELASTOMERIC FILAMENTS. Am. Viscose Corp. BP 869 214, May 31, 1961. (3836)

INSULATION FOR WEARING APPAREL. Midland Silicones Ltd. BP 869 565, May 31, 1961.
Insulated clothing consisting of two layers of fabric separated by a layer of air-permeable organopolysiloxane elastomeric foam. (3837)

UPHOLSTERY PADDING FROM WOOLEN CARD WASTE. John Cotton (Jute) Ltd. BP 869 621, May 31, 1961.
The fibers are scoured and carded into a thin web. Several layers of the web, impregnated with a bonding agent, are bonded together by pressure and heat. (3838)

APPARATUS FOR PRODUCING TUFTED FABRIC WITH CUT AND UNCUT LOOPS IN SAME ROW. J. K. McCutchen. USP 2 982 239 and 2 982 240, May 2, 1961. (3839)

MACHINE FOR MANUFACTURING WIRE REINFORCED UPHOLSTERY SUPPORTING MATS. W. F. Richardson and E. J. Hood (to Flex-O-Lators, Inc.). USP 2 982 317, May 2, 1961. (3840)

APPARATUS FOR MAKING TUFTED FABRICS WITH UNCUT AND CUT LOOPS. W. A. Rice (to Mohasco Inds.). USP 2 985 124, May 23, 1961. (3841)

APPARATUS FOR MAKING NONWOVEN SCRIM. H. P. Fry, Jr. (to Am. Viscose Corp.). USP 2 985 220, May 23, 1961.
The strands making up the warp and weft are all fed from a stationary creel located apart from the actual fabric-making apparatus so that no shutdown is necessary in order to replenish supplies. (3842)

## FINISHING D

### Chemical processes D1

BIS-TRIAZINYLAMINOSTILBENE OPTICAL BRIGHTENING AGENTS FOR CELLULOSE. Farbenfabriken Bayer AG. BP 855 480, Nov. 30, 1960. Summary in BCIRA 41: 1677 (1961). (3843)

FLUORINATED SILANE AND SILOXANE OIL REPELLENTS. Midland Silicones Ltd. BP 869 343, May 31, 1961. (3844)

BRIGHTENING MANMADE FIBER FABRICS WITH DIPHENYLINDOLES. L. E. Craig (to Gen. Aniline & Film Corp.). USP 2 980 549, Apr. 18, 1961. (3845)

DISPERSIONS OF BENZIMIDAZOLYLSTILBENE BRIGHTENING AGENTS FOR USE IN DETERGENTS. N. N. Crounse (to Sterling Drug Inc.). USP 2 980 625, Apr. 18, 1961. (3846)

METAL COATING APPLICATOR FOR GLASS FILAMENTS. H. B. Whitehurst, W. H. Otto, and W. P. Warthen (to Owens-Corning Fiberglas Corp.). USP 2 980 956, Apr. 25, 1961.
Apparatus for continuously applying metal to glass fibers during fiber formation. (3847)

NON-FOAMING METHYLATED METHYLOL MELAMINE WATER-REPELLENT COMPOSITION. W. F. Herbes and A. C. Wintringham (to Am. Cyanamid Co.). USP 2 981 704, Apr. 25, 1961. (3848)

APPARATUS FOR FORMING A UNIFORM LAYER OF UNTANGLED WOOL FIBERS. J. Walsh and J. F. Sinclair (to Commonwealth Scientific & Ind. Research Org., Australia). USP 2 981 985, May 2, 1961.
The apparatus is particularly suitable for the feeding of fibers to a conveyor in the solvent degreasing process. (3849)

ANTISTATIC AGENT FOR SYNTHETIC FIBERS. H. I. Anthes (to E. I. du Pont de Nemours & Co.). USP 2 982 751, May 2, 1961.
The reaction product of a polyepoxide and a polyamine is claimed. (3850)

IRONING, BRUSHING, AND BEATING MACHINE FOR PILE MATERIALS. A. Hart. USP 2 983 023, May 9, 1961. (3851)

DIQUATERNARY AMMONIUM COMPOUNDS FOR TEXTILE SOFTENING AGENTS. E. Matter, O. Albrecht, and A. Hiestand (to Ciba Ltd). USP 2 984 587, May 16, 1961. (3852)

ANTISTATIC AGENTS. J. C. MacNeill (to Atlantic Refining Co.). USP 2 985 543, May 23, 1961.
Durable finishes are provided by treatment with aqueous dispersions of a polyglycolamine salt. (3853)

### Dyeing and printing D2

PROCESS FOR PRINTING AND DYEING POLYESTER FIBERS. Cassella Farbwerke Mainkur AG. BP 854 340, Nov. 16, 1960. Through BCIRA 41: 1683 (1961).
Deep dyeings and prints are obtained on fabrics of the Terylene type by adding to the padding liquor or paste sulfonated castor or olive oil, or other wetting agents, in large excess. The dye is fixed by a heat treatment at 190-220° C for 30-120 sec. (3854)

CONTINUOUS DYEING OF TEXTILE WEBS WITH VAT AND/OR SULFUR DYESTUFFS. Badische Anilin & Soda Fabrik AG. BP 855 496, Nov. 30, 1960. Through BCIRA 41: 1682 (1961).
The sulfinic acid derivatives covered by BP 855 494 are also claimed as reducing agents in continuous dyeing. (3855)

PROCESS FOR IMPROVING THE DYEING OF TERYLENE FIBERS. Farbwerke Hoechst AG. BP 855 546, Dec. 7, 1960. Through BCIRA 41: 1955 (1961).
The fibers are treated with a solution in an inert solvent of an addition product of an ether or tertiary amine and sulfur trioxide and/or a halogen derivative of a sulfur oxy-acid (e.g. chlorosulfonic acid). After the treatment the fibers may be further treated with hydrazine, ethylformamide, or N-formylcyclohexylamine. (3856)

VIGOUREUX PRINTING IMPRESSION ROLLERS. Ciba Ltd. BP 855 588, Dec. 7, 1960. Through BCIRA 41: 1960 (1961).
The roller has helical, detachable impression elements mounted lengthwise and secured in curved slots in plates at the ends of the roller. (3857)

AUTOMATIC SCREEN PRINTING MACHINES. C. Masson (France). BP 855 697, Dec. 7, 1960. Through BCIRA 41: 1961 (1961).
In a screen printing machine of the type in which the stencil frames are hinged to the table, the frames are raised and lowered from a bar suspended above the table in cam-actuated vertical slides, and the scrapers are actuated in unison by arms linked to a shaft, also above the table. (3858)

PROCESS FOR THE PRINTING OF TEXTILES WITH REACTIVE DYES. J. Lolkema and G. Moes (to W. A. Scholten's Chemische Fabrieken NV). BP 856 284, Dec. 14, 1960. Through BCIRA 41: 1963 (1961).
Esters and ethers of starch are claimed as thickening agents for dyes of the Procion class. (3859)

DYEING NITROGENOUS FIBERS. L. Peters and C. B. Stevens. BP 856 381, Dec. 14, 1960. Through BCIRA 41: 1956 (1961).
Wool, silk, and polyamides are dyed or printed in the presence of n-butyl or benzyl alcohol or, generally, a liquid that is but slightly soluble in water but is a better solvent for the dye or pigment than water is. (3860)

DYEING CELLULOSE/POLYESTER BLENDS. P. Krug (to Hardman & Holden Ltd). BP 856 846, Dec. 21, 1960. Through BCIRA 41: 1954 (1961).
Coloration of polyester fibers is effected by leuco vat dyes under acid conditions but alkaline conditions are required for cellulosic fibers. Accordingly, for mixture fabrics, the vat dye dispersion is reduced with thiourea dioxide under acid conditions but an excess is used, some being left available for action when the material, after drying and heating, is impregnated with alkali and heated again. (3861)

DYEING OF CELLULOSE WITH VAT DYES. W. Kilby and C. Hitchen (to Standfast Dyers & Printers Ltd). BP 856 916, Dec. 21, 1960. Through BCIRA 41: 1953 (1961).
The material is padded with an acid leuco dye prepared by reducing the vat dye with thiourea dioxide under acid or neutral conditions, then run successively through alkali and the molten metal of a continuous dyeing machine. (3862)

PROCESS FOR PRINTING CELLULOSE ACETATE FIBERS. Farbwerke Hoechst AG. BP 858 054, Jan. 4, 1961. Through BCIRA 41: 1964 (1961).
Products of the condensation of ethylene oxide with phenol, the naphthols and tetrahydronaphthol are added to the printing pastes as leveling agents. (3863)

SPUN DYED CELLULOSE ACETATE FILAMENTS. Sandoz Ltd. BP 857 130, Dec. 29, 1960. Through BCIRA 41: 1809 (1961).
Red cellulose acetate filaments are spun from mixtures of secondary cellulose acetate and pigments obtained by condensing aniline and a number of its alkyl and chloro ring derivatives with 3:4:9:10-perylenetetracarboxylic acid. (3864)

SULFUR DYES. J. G. Kennedy (to Whiffen & Sons Ltd). BP 857 429, Dec. 29, 1960. Through BCIRA 41: 1951 (1961).
Sulfur dyes are dissolved (with dyeing assistants) in aqueous solution of hydrazine hydrate. (3865)

STRIPE PRINTING ROLLERS. Etab. Victor Simon. BP 857 838, Jan. 4, 1961. Through BCIRA 41: 1959 (1961).
For the printing of fine stripes the coloring matter is made up (with a plastic) into soluble discs that are clamped together on a shaft of relatively small diameter. The discs are all made to the thickness of the finest stripe, wider stripes being obtained by placing the required number side by side. Wavy stripes are printed with undulated discs. (3866)

SILANES FOR PRETREATING GLASS FABRICS WITH ACID DYES. Midland Silicones Ltd. BP 858 445, Jan. 11, 1961. Through BCIRA 41: 1957 (1961).
The invention relates to the production of silanes of the type of $(Alk.O)_3 \cdot Si(CH_2)_3 \cdot NH \cdot CH_2 \cdot CH_2 \cdot NH_2$ where Alk. is methyl or ethyl. Glass fiber cloth can be dyed with acid dyes if first treated with one of these silanes. (3867)

PRODUCTION OF DYED CELLULOSE FIBERS. Badische Anilin & Soda Fabrik. BP 858 737, Jan. 11, 1961. Through BCIRA 41: 1952 (1961).
Fast green to turquoise blue dyeings and prints on cotton and rayon fabrics are given by dyes of the tetrazaporphin series. (3868)

DYEING CELLULOSIC TEXTILES WITH AZO DYES. Ciba Ltd. BP 868 492, May 17, 1961.
Azo dyes containing a sulfonic acid group imparting solubility in water and an aliphatic halogenated acylamino group are applied by foularding and are fixed by steaming in the presence of an acid binding agent. (3869)

COLORED CELLULOSE FABRICS. Badische Anilin & Soda-Fabrik AG. BP 868 741, May 25, 1961.
The azo and anthraquinone dyes claimed are fixed by steaming in the presence of an alkali. (3870)

DYEING OF OLEFIN FIBERS. Brit. Nylon Spinners Ltd. BP 868 869, May 25, 1961.
The use of aqueous solutions of basic dyes suitable for dyeing acrylic fibers is claimed. (3871)

FIXING PIGMENTS ON FIBROUS MATERIALS. Farbwerke Hoechst AG. BP 868 935, May 25, 1961.
The fixative comprises an aqueous solution of a high molecular weight compound containing carboxyl groups and an alkylene imine. (3872)

AZO DYES FOR CELLULOSE DYEING. Ciba Ltd. BP 869 279, May 31, 1961.
Water soluble azo dyes derived from cyanuric halide and containing at least two sulfonic acid and/or carboxyl groups. (3873)

ASSISTANTS FOR THE WASHFAST DYEING OF TRIACETATE FIBERS WITH DISPERSE DYES. V. S. Salvin, B. S. Sprague, and F. Fortess (to Celanese Corp.). USP 2 982 597, May 2, 1961. (3874)

PRINTING AND DYEING PILE CARPETS. M. V. Tillett and G. H. Tillett (to Bigelow-Sanford, Inc.). USP 2 984 540, May 16, 1961.
Apparatus for applying several colors simultaneously without distortion of boundary lines includes receptacles for the dye with upstanding walls defining the design to be applied and separating the pile in adjoining areas. (3875)

DEVICE FOR DYEING STRETCH YARNS WITH VARIEGATED COLORS. J. E. Troy. USP 2 985 004, May 23, 1961. (3876)

DYE STRIPPING. A. Janson, J. Conrad, and K. Morweiser (to Badische Anilin & Soda-Fabrik AG). USP 2 985 500, May 23, 1961.
Acid stripping baths containing hydroxyalkane sulfinic acid reducing agents are stabilized by means of low molecular weight aliphatic aldehydes, e.g. formaldehyde, acetaldehyde, or glyoxal. (3877)

## Mechanical processes D3

WEFT OR COURSE SKEWNESS CORRECTING DEVICE. I. M. Hill (to J. Dalglish & Sons Ltd). BP 854 075, Nov. 16, 1960. Summary in BCIRA 41: 1687 (1961). (3878)

PILE CUTTING MACHINE. F. R. Sheen (to R. A. Lister & Co. Ltd). BP 854 915, Nov. 23, 1960. Summary in BCIRA 41: 1689 (1961). (3879)

FABRIC PACKAGING MACHINE. C. W. Marsh (to Bured Inc.). BP 855 254, Nov. 30, 1960. Through BCIRA 41: 1692 (1961).
The invention relates to a fully automatic machine for winding laces and ribbons into hanks and wrapping them in paper or the like. (3880)

MACHINES FOR THE HEAT TREATMENT OF RUNNING YARNS. A. Dobson (to E. Scragg & Sons Ltd). BP 857 916, Jan. 4, 1961. Through BCIRA 41: 1863 (1961).
The invention relates to a feeler device for an electrically-heated apparatus, for such purposes as the heat-setting of nylon yarn, which actuates a stop motion if the yarn fails and also operates a solenoid whereby the current is switched down. (3881)

APPARATUS FOR VARYING THE LENGTH OF WOVEN OR KNIT FABRICS BY SHRINKING OR STRETCHING. S. F. James (Sweden). BP 865 599, Apr. 19, 1961. (3882)

CARD WIRE RAISING MACHINE. K. A. Mullers (Germany). BP 867 333, May 3, 1961.
Variable speed drive arrangement for achieving a finely graduated adjustment of the degree of napping. (3883)

FRICTION CALENDER. VEB Erste Maschinenfabrik. BP 868 135, May 17, 1961.
In a calender having a friction roller with its own drive and a resilient roller driven by the friction roller, an auxiliary drive is provided for braking the resilient roller. (3884)

COMPRESSIVE SHRINKAGE APPARATUS. Bradford Dyers' Assoc. Ltd. BP 866 074, Apr. 26, 1961.
To prevent uncontrolled stretching between the compressive shrinkage machine and the Palmer dryer used in conjunction with it, the speed at which the fabric is delivered by the shrinkage machine is only slightly less than that at which it travels in the dryer. Moreover, the fabric passes straight to the dryer in an unsupported condition. (3885)

APPARATUS FOR PRODUCING EMBOSSED FABRICS WITH TWO TONE COLOR EFFECTS. United Merchants & Mfrs. Inc. BP 868 458, May 17, 1961.
Moistened fabric is passed between the nip of a steel embossing roll and a plain surfaced roll and is subsequently dyed. The embossed areas absorb a smaller amount of dye than the unembossed areas, resulting in a two tone color effect. (3886)

POSITIONING MEANS FOR PRESSURE ROLLS ON MANGLING, CALENDERING, OR EMBOSSING MACHINES. E. C. Mills (to Western Board Mills Ltd). BP 868 498, May 17, 1961. (3887)

## Drying, setting, conditioning D4

HEAT TREATMENT APPARATUS. Industrial Ovens, Inc. BP 867 593 and 867 594, May 10, 1961.
The temperature of the strand or fabric is controlled by altering the position of a dancer guide roll within the heating chamber. (3888)

APPARATUS FOR STABILIZING TUBULAR KNIT FABRIC. Compax Corp. BP 868 207, May 17, 1961.
The fabric is spread to a predetermined width, steamed and compacted to effect longitudinal shrinkage. (3889)

HOT AIR WEB DRYING APPARATUS. Dominion Eng. Works Ltd. BP 868 843, May 25, 1961.
In an apparatus in which hot air is flowed over both sides of the web simultaneously in a direction counter to the direction of the web motion, the moisture-laden air is rejected through heat exchanging means in which the incoming air is heated. (3890)

# TESTING AND MEASUREMENT E

## Yarns E2

DEVICE FOR DETERMINING SHORT-TERM VARIATIONS IN YARNS, ROVINGS, AND SLIVERS, AND SEVERING THE MATERIAL WHEN SUCH VARIATION OCCUR. Zellweger Ltd. BP 855 267, Nov. 30, 1960. Summary in BCIRA 41: 1608 (1961). (3891)

ELECTRICAL MEASUREMENT OF YARN THICKNESS VARIATION. E. J. R. Hewitt (to Brit. Nylon Spinners Ltd). BP 855 595, Dec. 7, 1960. Through BCIRA 41: 1805 (1961).
Rapid to-and-fro movement is caused between the running thread and the electrodes of a measuring condenser (BP 843 623, abstr. 867/61) sufficient for the thread to be inserted between and withdrawn from the electrodes at a frequency depending on the speed of the response required in the particular process. Capacity changes are detected in an electric circuit in which any resultant signals at the given frequency are amplified and the output is used to give an indication of the thickness of the thread. (3892)